MORNINGTON ISLAND MASTER PLAN 2020

October 2020

Queensland Government

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Bringing ideas to life

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ACKNOWLEDGMENT

Mornington Shire Council and the consultants who have assisted in the preparation of this master plan would like to acknowledge the traditional owners, historical owners and community members as traditional custodians of the land in which the master plan investigates. There are important cultural and historical values across the region that have existed for centuries. Any future development within Gununa should consider the traditional custodianship of the land and appropriate engagement and permissions should be sought.

INTRODUCTION

PROJECT BACKGROUND

Mornington Shire Council recognise the need to plan for future development in Gununa, the township of Mornington Island. Every community requires the timely provision of adequate residential, commercial and community facilities in order to prosper.

Housing in remote areas is affected by several, often unique factors including the availability of land, construction costs and topography constraints. Other factors that impact housing availability in Gununa are the Council and Government organisations and non-government organisations that require staff housing.

Land tenure also restricts the availability of land.

Tourism, commercial activities and industrial uses are all integral for employment opportunities. Opportunities for tourism may be underutilised in Gununa, likely due to access being limited to sea and air, the seasonal weather conditions, lack of affordable accommodation, standard of existing accommodation and limited tourism aimed initiatives.

Community facilities such as schools, playgrounds, waste and water management, transportation and pedestrian and cycle pathways are integral parts to a healthy community. The appropriate provision of community facilities means spaces are safer, accessible and more liveable which in turn creates an environment where people feel connected and part of a community.

The Mornington Island Master Plan 2020 has been developed considering the above important themes and consider the work that has been undertaken to date, including the previous Mornington Island Master Plan and the Barwu Concept Plan, both developed in 2018.

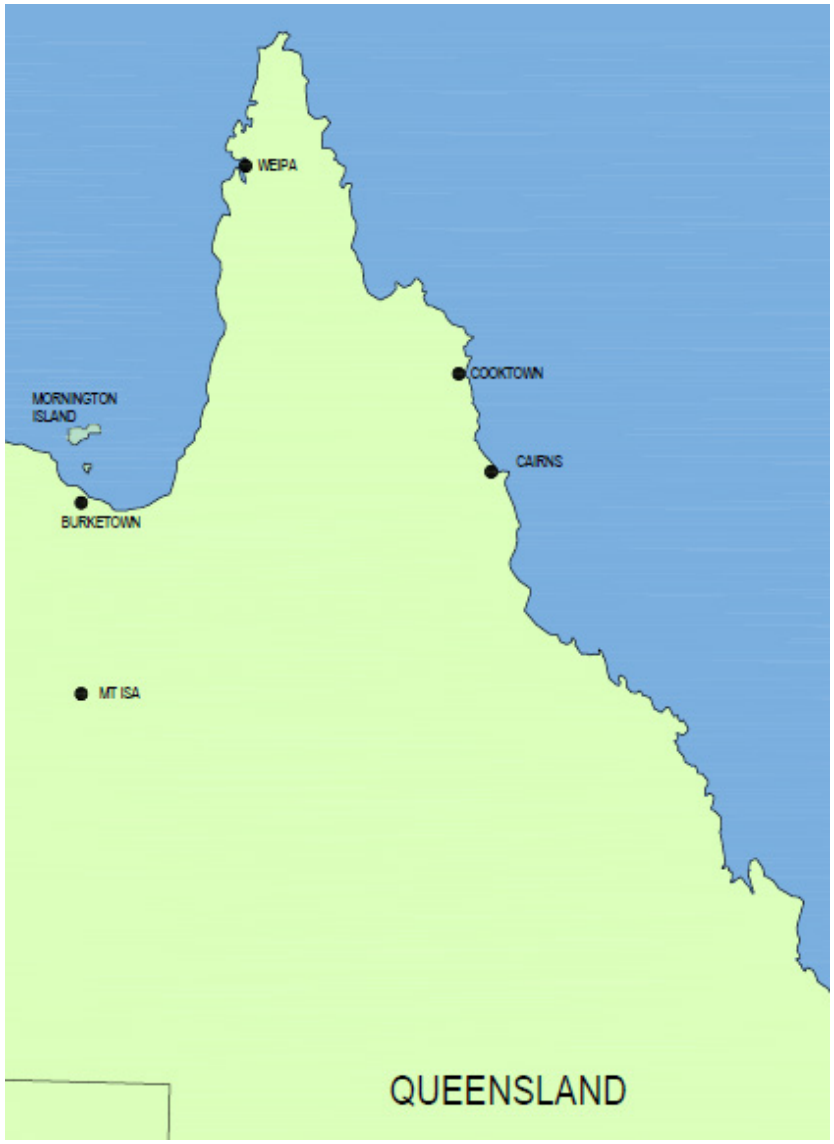


Figure 1: Mornington island and northern Queensland map

TOWNSHIP OF GUNUNA

Mornington Island is located within the southern Gulf of Carpentaria and is the largest island in the Wellesley Island group. Mornington Island is 444km north of Mount Isa and the closest town is Burketown which is approximately 125km to the south-east on the mainland (see Figure 1 on previous page).

The only developed area on Mornington Island is known as Gununa which is located on the coast, to the south west of the Island. Mornington Island is only accessible by sea or air.

The lack of vehicular access means the area isn't easily accessible for residents or tourists. Mornington Island airport is located immediately adjacent to the north west of the Gununa township. The current location and alignment of the airstrip means development within the township is somewhat constrained due to the Obstacle Limitation Surfaces associated with the operation of the runway, access issues and the existing Deed of Grant in Trust (DOGIT).

The water storage dam for Gununa is located approximately 2.2km to the north of the township.

For the purposes of developing a new master plan for Gununa, an investigation area as shown in Figure 2 has been defined.

Figure 2: Mornington Island Master Plan 2020 Investigation area

PROJECT PURPOSE

A master plan is used to identify where there is suitable land for development such as residential, commercial and industrial uses. A master plan considers existing relevant planning documents and constraints and considers the needs and vision of the community. Council can then use the master plan document in the future, to guide development.

The following will be considered:

- Is there a need for additional housing and commercial and industrial businesses? If so, where should they be located?
- Is there a need for improved roads, pathways and cycle paths?
- Is the airport located in the most appropriate location?
- Is the future supply of water, sewerage and power adequate?
- Are community facilities adequate and if not, what would better serve the community?
- Can cultural heritage be better protected and/or enhanced?
- Are there opportunities for tourism activities?

The master plan investigates what is important to the community of Gununa, what currently (or has in the past) works well and what improvements need to be made. The plan ascertains where there may be a deficiency of land uses and services. This is determined through community engagement and engagement with local suppliers, utility providers and Government agencies.

A master plan considers existing relevant planning documents, proposes amendments where necessary and considers the needs and vision of the community.

Mornington Shire Council and the Department of Aboriginal and Torres Strait Islander Partnerships recognise the importance of investigating the current and future needs of the community in Gununa and have developed this master plan in partnership and with input from the community of Gununa and relevant stakeholders.

COMMUNITY OVERVIEW

EXISTING FACILITIES AND SERVICES

The below figure provides a broad snap shot of existing land uses in Gununa.

Figure 3: Gununa existing land uses map (Source: Queensland Globe)

NATIVE TITLE

Native title and cultural heritage negations are not a constraint for identifying future activities in Mornington Island, however they are an important consideration should development need to occur.

There are two native title determinations applicable to Mornington Island:

- Lardil, Yangkaal, Gangalidda & Kaiadilt Peoples (QCD2006/001) which excludes the Gununa township
- Wellesley Islands Sea Claim (QCD2004/001) which only includes the land and water between the high water line on Mornington Island and a line five nautical miles seaward.

The Registered Native Title Body Corporate for both determinations is the Gulf Region Aboriginal Corporation RNTBC.

There are no current Indigenous Land Use Agreements (ILUAs) over Mornington Island.

TENURE

Mornington Island is Aboriginal freehold land which is inalienable.

The Gununa township is under township freehold held by Mornington Shire Council.

The land outside the Gununa township is non-township freehold held by Gulf Region Aboriginal Corporation.

There is one small reserve land parcel (Lot 926 SP282722).

Figure 4: Gununa Land Tenure (Source: Queensland Globe)

DEMOGRAPHICS

Key population and housing statistics have been collated for Mornington Island. The information has been sourced from the following publications:

- Australian Bureau of Statistics – *2016 Census of Population and Housing data, General Community Profile (ABS 2016a), Aboriginal and Torres Strait Islander People Profile (ABS 2016b), Quickstats (ABS 2016c) and DATSIP Know Your Community Profile for Mornington Indigenous Location (ILOC) (which uses 2016 Census Population and Housing data)*
- Mornington Shire Planning Scheme

It is noted that Indigenous communities often live with extended family and may travel frequently to other communities. Additionally, some people living on Mornington Island fly in and out. Therefore, the population and housing data would likely have fluctuations that are difficult to ascertain.

Population count and age structure

The 2016 Census recorded the total population in Mornington LGA as 1,143 persons. Of the total population 86% identified as Indigenous, compared to 4% in Queensland. In 2016, 33.9% of the population was aged between 0 - 14 years. The median age was recorded as 27, whilst the median age in Queensland was 37.

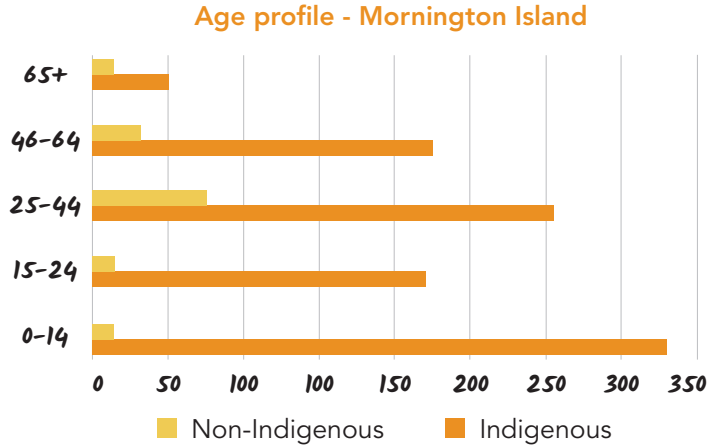


Figure 5: Age and population profile Mornington Island (Source: ABS 2016)

Housing

In 2016 occupied private dwellings on Mornington Island were mostly separate houses (88.9%) followed by 8.3% semi-detached, row or terrace house, townhouse etc. The average number of bedrooms in Mornington LGA per occupied private dwelling was 2.7, compared to 3.2 in Queensland. The average number of people per household was 3.7, compared to 2.6 in Queensland.

The dwelling structure was noted as follows from the 2016 Census:

- 222 SEPARATE HOUSES
- 20 SEMI-DETACHES HOUSES
- 8 CARAVAN, CABINS OR HOUSEBOATS
- 6 FLATS/UNITS
- 3 IMPROVISED HOMES

The DATSIP Know Your Community Profile for Mornington Indigenous Location (ILOC) noted 92.2% of households with Indigenous persons, lived in separate houses compared to 61.1% of non-Indigenous households. Of these Indigenous person households, 41.5% were considered overcrowded, meaning a dwelling that needs one or more extra bedrooms.

Transport

The most common method of travel to work in Mornington LGA in 2016 Census was walking (44.1%), compared to 43.4% driving (both as car driver and car as passenger). Far more people walked to work in Mornington LGA compared to only 3.3% in Queensland.

Economy

The unemployment rate recorded for Mornington LGA in the 2016 Census was 24.2%, compared to 7.6% in Queensland. Of those who reported being in the labour force, 52.1% were employed full time and 17.4% were part-time.

The top industries of employment are noted in the below chart.

Industry of employment - Mornington Island

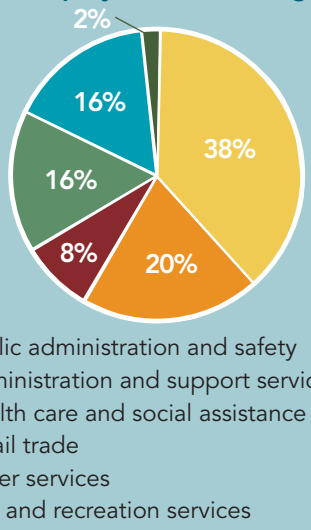


Figure 6: Industry of employment profile Mornington Island (Source: ABS 2016)

The median personal income for people aged 15 years and over in Mornington LGA was $352 per week, compared to $660 in Queensland.

TOURISM

Mornington Shire Council would like to increase tourism opportunities in the area. The Island offers scenic, natural landscapes that are sought after by many tourists. More affordable and frequent flights, improved accommodation options and guided tours (such as water sports or local heritage talks) are some ideas that may entice more tourists to the area.

There are excellent fishing opportunities in the waters around the Island and in partnership with Gulf Region Aboriginal Corporation (GRAC) and Council, private operators may be able to run viable commercial or recreational fishing expeditions. A fishing lodge used to be operational to the north of the Island called Birri Fishing Resort. It is understood the fishing lodge is no longer operational and is seeking external funding assistance to carry out redevelopment works.

Further discussions will be conducted with Council and the community over the coming months, and this feedback will be considered and where necessary, included in this report. The Mornington Island Master Plan 2020 will help establish ideas that will enhance tourism in the area - well planned tourism helps boost local economies.

EXISTING INFRASTRUCTURE

WATER SUPPLY

Raw Water Supply

Raw water for the Gununa township is supplied from the Dithery Creek dam. Bores and rainwater tanks have previously been utilised to service the community, but these are no longer in use.

Dithery Creek Dam (shown in Figure 7) is an excavated water storage located on Dithery Creek. At full capacity the dam can hold 846ML. When the water level becomes low, high sediment levels can impact quality and additional treatment is required before supplying the town.

Raw water is pumped from Dithery Creek Dam to the water storage compound 2.2km away on Birri Road. (shown in Figure 3).

Figure 7: Dithery Creek Dam (Source: Queensland Globe)

Water Treatment

Raw water is treated at the water compound located 500m north of Gununa, along Birri Road.

The water is chlorinated at the water storage compound. The current system is chlorine gas, but this will soon be converted to liquid chlorine. A trial of treating the water with sodium hydroxide for pH correction is currently being undertaken. No other treatment currently occurs.

Water Supply Storage

Once treated the water is stored in two 1.7ML precast concrete ground level reservoirs at the storage compound. This provides 3.4ML of water storage for the community, which is approximately 2.5 days of water at peak flow.

Water Supply Network

Treated water is supplied to the community via constant flow pressure pumps, pumping through approximately 8km of pipe network. The network consists of a range of pipe sizes and materials.

The reticulation system was constructed in 1971-1975, and there were some upgrades in 1992 and 2012.

Water Supply Volumes

The current average water usage in Gununa is estimated at around 900L/p/d. However this figure can exceed 1000L/p/d during the dry season. This is a high level of demand and is well above the average water usage in other parts of Queensland, with Cairns usage at 500L/p/d and South East Queensland in the order of 200L/p/d. This rate is also above the safe extraction rate from the dam and could lead to water supply shortages in the future.

ELECTRICAL SUPPLY

The Electrical supply for Mornington Island is provided by Ergon Energy. The power station is located between Warradakun and Lardil Streets, across from the stores and is powered by four diesel generators. The power station has a capacity of 2240KW. Some roof top solar has been installed in the community, however this only contributes 35KW at present.

Electrical supply to the community is by overhead lines throughout the community.

There is an aspiration by the community to have the existing power station relocated. This is discussed in the *Future Infrastructure Requirements* (refer to page 44).

COMMUNICATIONS

Telecommunications for the community is supplied by Telstra. This includes fixed lines and mobile phone and data coverage. The mobile coverage extends across the Gununa township, including past Dithery Creek Dam and along Birri Road.

SEWERAGE

Sewerage Network

The Gununa township is serviced by just over 5km gravity sewerage system, servicing around 250 connections. All properties within the township area are connected to the system. The sewerage is collected via three pump stations, Pump Station A at the eastern end of Gununa, Pump Station B in the centre of the community and Pump Station C on the foreshore. A 2.5km rising main then pumps the sewerage to the treatment plant.

Sewerage Treatment

All sewerage is treated in a lagoon system located to the west of the existing airstrip (shown in Figure 3). The treatment plant consists of two treatment 'trains' which run in parallel. Each train consists of a primary treatment lagoon, a secondary treatment lagoon and two tertiary treatment lagoons.

The current design of the plant is suitable for approximately 1350EP and was constructed in the late 1980's. Some augmentation to the plant was undertaken in 2009. The capacity of the plant is suitable for the current population.

Ocean Outfall

Once treated, sewerage effluent is disposed via an ocean outfall. The current ocean outfall was constructed in 2009 however it is in poor condition and will soon be replaced. The new outfall will extend approximately 700m from the beach.

TRANSPORT

Roads

The Gununa township contains a number of sealed internal roads. There are also a number of tracks and unsealed roads located around the community.

A sealed road runs from Gununa to the landfill (6km). This road then continues unsealed to Birri Lodge located on the other side of the Island. There are a number of unsealed roads and tracks across the Island which lead to outstations, borrow pits and other sites.

Footpaths

Dedicated footpaths or cycle paths are limited within Gununa.

Airport

Mornington Island is serviced by a 1515m sealed airstrip. The airstrip has recently been upgraded to strengthen the pavement. A small airport terminal is located adjacent to the airstrip. The terminal has recently been upgraded and now meets current Australian security screening requirements.

The community is currently serviced daily by a regional airline. Aircraft utilising the airport are typically of a twin engine propeller type, with capacities of around 30-40 passengers. The airport is also utilised for charter, flying doctor, police airwing and other light aircraft.

Sea Access

There is a barge ramp and jetty located on the south-western end of the Island. The majority of goods brought onto the Island are transported using a barge from the mainland and these barges use the existing barge ramp. The jetty is relatively new and is of a concrete floor construction. Refer to page 44, *Future Infrastructure Requirements*, for comments regarding sea access improvement.

STORMWATER

The Gununa township is located at the southern end of a large floodplain. A large drain located to the north of the township runs in an east-west direction. The drain collects runoff from the floodplain and discharges at each end.

The existing stormwater system within the Gununa township consists of a network kerb and channel on the sealed roads and a piped drainage system. The capacity and condition of the drainage system is unknown.

SOLID WASTE

Solid waste is disposed of at a landfill located approximately 6km from the community along Birri Road (shown in Figure 3). The landfill has three open and operational cells, providing approximately 1-2 years of landfill capacity. There is additional room available at the landfill site to construct up to another 30 cells, giving a landfill capacity in excess of 30 years.

At present all waste is sent to the landfill, there are no recycling or other waste diversion measures undertaken on the Island.

PLANNING ANALYSIS

LOCAL PLANNING SCHEME

Overview

The applicable local government planning scheme for Mornington Island is the Mornington Shire Planning Scheme.

The planning scheme commenced on 17 April 2014. The planning scheme was amended in 2018 to align with the Planning Act 2016 (Qld) and version 1.1 commenced on 30 July 2018.

The planning scheme incorporated State interests reflecting the following State Planning Policies:

- Temporary SPP 1/13: Planning for Prosperity
- SPP 5/10: Air, Noise and Hazardous Materials
- SPP 4/10: Healthy Waters
- SPP 3/10: Acceleration of compliance assessment
- SPP 2/02: Planning and Managing Development Involving Acid Sulfate Soils 1.0

It is noted the above policies lapsed on 2 December 2013 and have been replaced by the State Planning Policy July 2017.

Strategic framework

The strategic intent of the planning scheme notes Gununa plays a key strategic role in the Council area as:

- the primary economic, administrative and service centre for the Council area;
- home to the majority of the Council's resident population; and
- the air and sea transport hub for the Council area.

The planning scheme identifies that in order to address emerging housing needs and future population growth, investigation of future expansion areas is required (refer to Figure 8 on the following page).

The strategic plan map for Gununa identifies the following development areas:

- *an investigation area to the north-east,*
- *a district centre around the Gununa town centre,*
- *the port (maritime development) at the jetty,*
- *industrial development at the Council depot and the bulk store, and*
- *tourism centre*

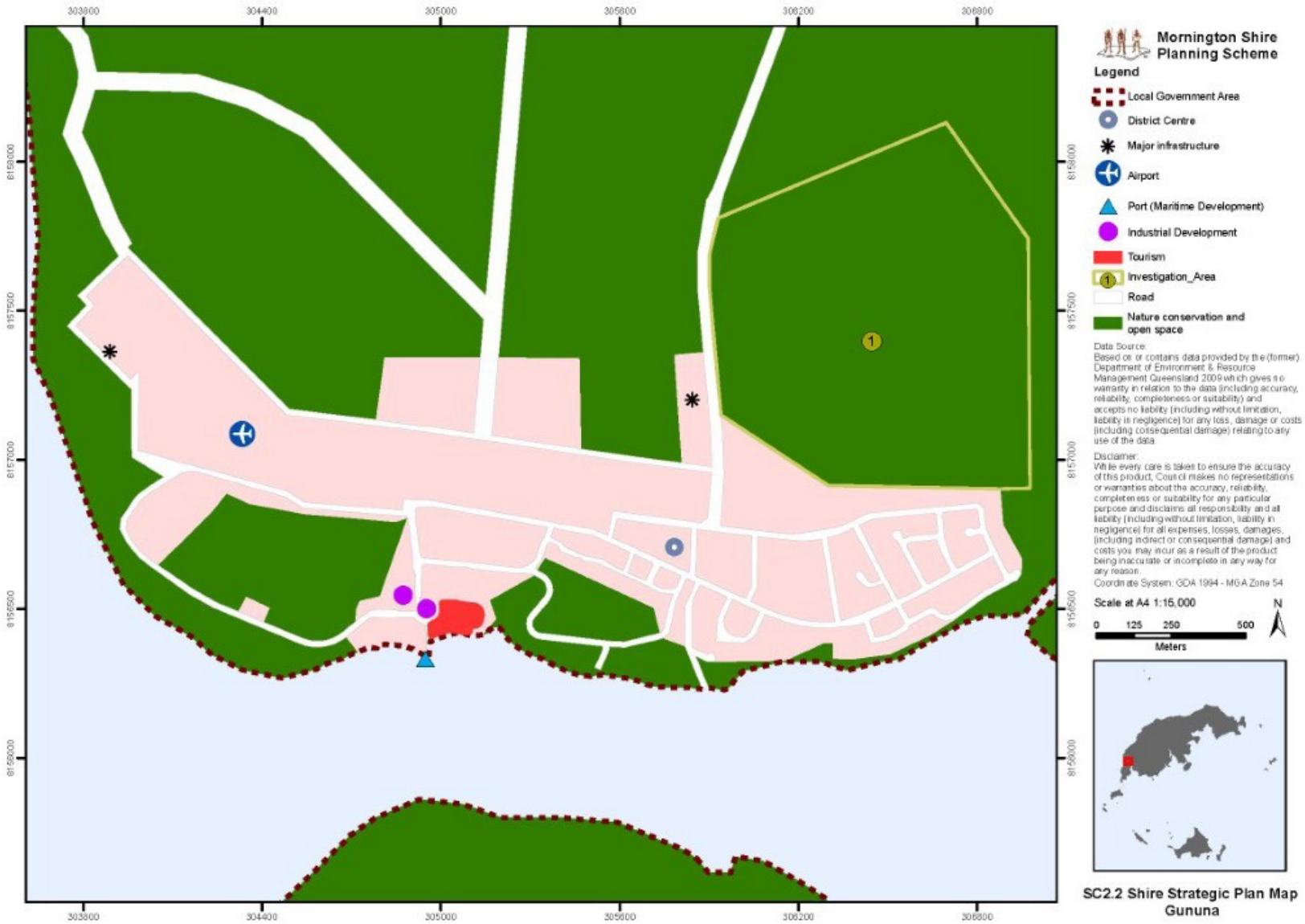


Figure 8: Planning scheme strategic plan map - Gununa (Source: Mornington Shire Planning Scheme)

Investigation area

The Settlement and Housing theme of the strategic framework states future population growth is accommodated through the expansion of the Gununa urban area on developable land to the north/north east.

The planning scheme identifies the following strategies:

- Undertake investigation of environmental conditions, natural hazards, cultural heritage and native title for the investigation area for the purposes of defining developable land suitable for accommodating expected future population growth.
- Prepare a master plan for the investigation area for the development of new residential allotments and associated public open space.

Gununa town centre

The Settlement and Housing theme of the strategic framework identifies the Gununa town centre (refer to Figure 9 below) as the key activity centre for the Shire.

The planning scheme identifies a strategy to prepare a master plan for the Gununa town centre that provides direction for built form and identifies catalyst projects and infrastructure.

Figure 9: Map showing Gununa town centre (Source: Mornington Shire Planning Scheme)

Zoning

Figure 10 (refer to the following page) shows the zoning map for Gununa, which is noted in Schedule 2 of the planning scheme. The zoning is generally reflective of current land uses.

The following zones are mapped within Gununa:

- **General residential zone**
  The purpose of this zone is to provide residential activities supported by a range of community uses and smallscale services and facilities that cater for residents.

  The general residential zoning reflects the current residential lots.

- **Centre zone**
  The purpose of this zone is to provide a mix of uses and activities, including, but not limited to business, retail, professional, administrative, entertainment, cultural and residential activities.

  The centre zone includes the existing retail uses as well as vacant land.

- **Recreation and open space zone**
  The purpose of the recreation and open space zone is to provide sporting, recreation, leisure, cultural and educational activities.

  The zone includes existing playing fields and parks.

- **Industry zone**
  The purpose of the industry zone is to provide for service, low, medium, or high impact industrial uses.

  The zone includes existing industrial uses at the Council depot and jetty.

- **Community facilities zone**
  The purpose of the community facility zone is to provide for community related activities and facilities whether under public or private ownership.

  The zone incorporates the health and educational precincts, the airport and government services.

- **Environmental management and conservation zone**
  The purpose of the environmental management and conservation zone is to provide for areas identified as supporting significant biological diversity and ecological integrity.

  The zone incorporates most of the undeveloped land on Mornington Island.

Overlays

The planning scheme has the following four overlays:

- **Airport environs overlay**
  The purpose of the airport environs overlay is to protect the existing and future operational requirements of the Mornington Island Airport and to provide the most compatible development of surrounding land.

  The airport environs overlay identifies the areas where height restrictions apply due to the take-off/approach path and the non-directional beacon.

- **Coastal protection overlay**
  The purpose of the coastal protection overlay is to manage development in areas prone to coastal erosion and coastal hazards.

  The overlay maps the sea level rise, erosion prone areas, and high and medium storm tide hazard areas. The erosion prone and storm tide hazard mapping is the same as the State Planning Policy mapping.

- **Interim floodplain assessment overlay**
  The purpose of the interim floodplain assessment overlay is to manage development outcomes in the floodplain. New buildings and lots are not encouraged within the mapped overlay area.

  The interim floodplain assessment overlay mapping is the same as the Queensland floodplain assessment overlay referenced in the State Planning Policy. Approximately 20 residential lots on Wengka Street are affected.

- **Bushfire hazard overlay**
  The purpose of the bushfire hazard overlay is to control development in bushfire prone area.

  All undeveloped land to the north of the airport and west of Gununa is zoned as medium bushfire risk. Refer to Appendix C: Mornington Shire Planning Scheme Overlays.

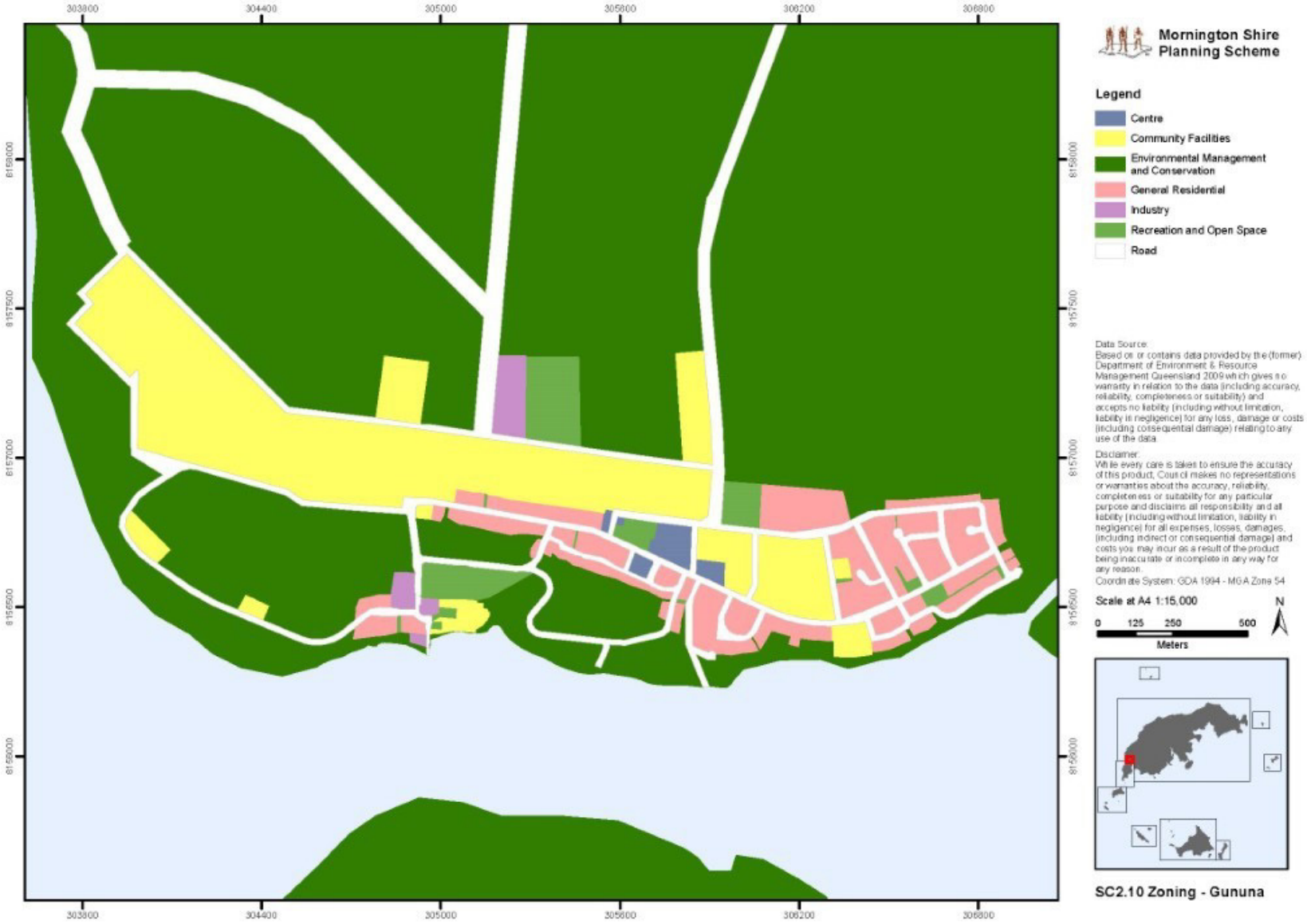


Figure 10: Planning scheme zoning map - Gununa (Source: Mornington Shire Planning Scheme)

STATE PLANNING

State planning interests

Matters of state environmental significance

Matters of state environmental significance (MSES) are defined under the State Planning Policy and the *Environmental Offsets Regulation 2014* (Qld) and certain environmental values that are protected under Queensland legislation are identified.

The following MSES are mapped within Gununa and the surrounding areas:

- Regulated vegetation - 100m from a wetland
- Regulated vegetation - essential habitat
- Regulated vegetation - Category B - endangered or of concern
- Regulated vegetation - defined watercourse
- Wildlife habitat - endangered or vulnerable
- Wildlife habitat - special least concern

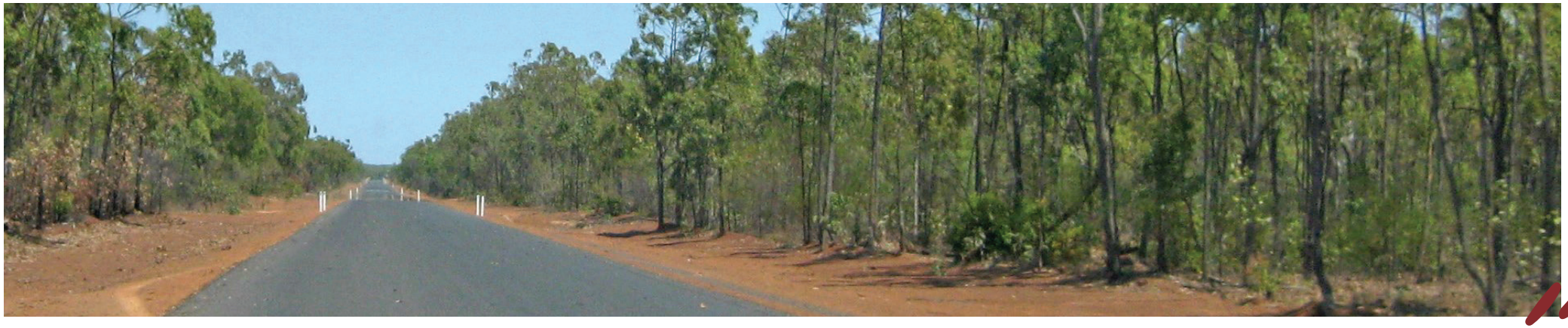
The southern portion of the Barwu Concept Plan area is mapped as Essential Habitat. An ecological assessment of this area has been undertaken and Appendix B outlines the findings.

The essential habitat mapping in the Barwu area relates to the Estuarine crocodile *Crocodylus porosus*. A mapped area of essential habitat for the Eastern curlew *Numenius madagascariensis* was also identified, however it is not located in the Barwu area. The field investigation found that the mapped area did not have the characteristics of essential habitat for the Estuarine crocodile and therefore is unlikely to meet the significant residual impact criteria and trigger an environmental offset.

Category B regulated vegetation is mapped as the following Regional Ecosystems:

- 2.2.1 - Casuarina equisetifolia +/- Thespesia populneoides, Hibiscus tiliaceus woodland on beaches and foredunes (classed as Of concern)
- 2.2.7 - Corymbia bella +/- C. polycarpa, C. confertiflora, Grevillea striata, Pandanus sp. woodland on coastal dunes (Least concern)
- 2.3.30e - Melaleuca spp. low woodland in seasonally flooded depressions on podsolic soils in the west (Least concern)

The field assessment confirmed that the area is correctly mapped as Category B remnant vegetation, with RE 2.7.5 being the main vegetation community across the Barwu site.



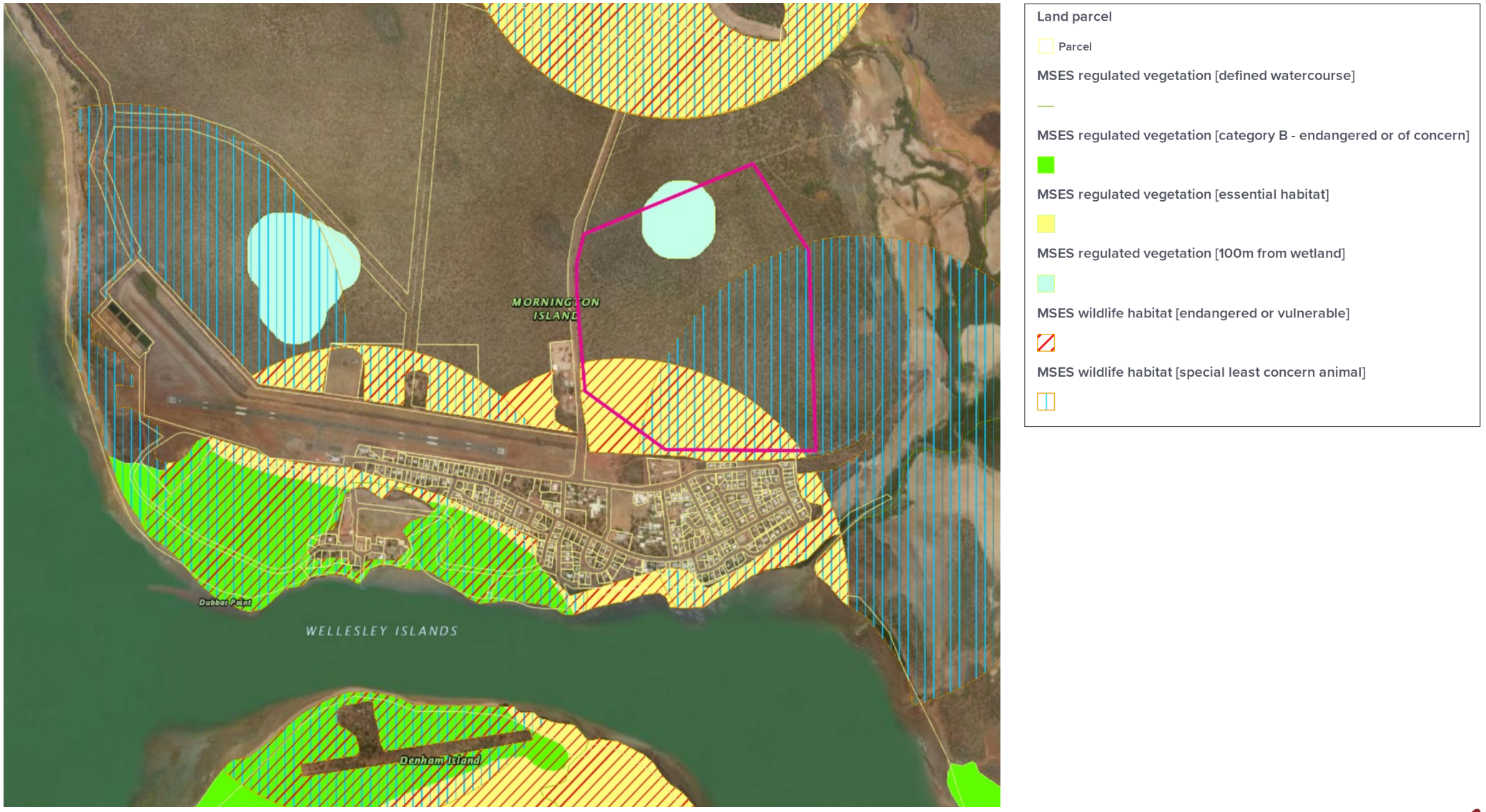


Figure 11: MSES mapping (Source: Queensland Globe)

Regulated vegetation

The *Vegetation Management Act 1999* aims to regulate the clearing of native vegetation.

Under the Regulated vegetation management map, the majority of the undeveloped area in Gununa and surrounds is mapped as Category B remnant vegetation - refer to Figure 12.

Schedule 21 of the *Planning Regulations 2017* (Qld) defines exempt clearing work. The following exemptions may be applicable to future native vegetation clearing works on Mornington Island:

- on airport premises for an airport-related purpose
- on Indigenous or freehold land:
  - for residential clearing
  - under an accepted development vegetation clearing code
  - clearing an of concern regional ecosystem in a category B area for urban purposes in an urban area.

Future development within areas of mapped remnant vegetation may be permitted for housing and aviation activities if habitat assessments are undertaken and exemption applications are submitted. Appropriate measures should be implemented to avoid, reduce and mitigate impacts.

Discussions will need to occur with the Department of Natural Resources, Mines and Energy to confirm required clearing may be considered as exempt clearing work, under the provisions of Schedule 21 of the *Planning Regulations 2017* (Qld).

Figure 12: Regulated vegetation mapping (Source: Queensland Globe)

CLIMATE CHANGE AND RESILIENCE

Climate change and natural disaster resilience are key considerations in the master planning of a community.

Mornington Island has a mean maximum temperature of 30˚C and a minimum of 26˚C with a mean annual rainfall of 1,220mm. Mornington Island is vulnerable to cyclones with the Gulf of Carpentaria experiencing an average of 3 cyclones per season (November to April). Rainfalls in excess of 350mm in one day have been experienced during a cyclone.

Reefs fringing and sea grass beds fringing Mornington Island are expected to be affected by climate change induced sea temperature level rises.

Queensland Climate Transition Strategy

The Queensland Government has set a State target of zero emission by 2050 with an interim target of a 30% reduction by 2030. The Queensland Climate Transition Strategy outlines the Government's approach to reaching these targets. A copy of the strategy is enclosed in Appendix K.

The strategy identifies the following three pathways:

Our pathways

PATHWAY 1
Create an environment for investment shift and innovation

Response 1—Facilitate the zero net emissions industries of the future

Response 2—Lead by example

PATHWAY 2
Facilitate existing Queensland industries to transition

Response 3—Understand the risks and opportunities that a zero net emissions future presents for Queensland

Response 4— Encourage innovation and transition to low and zero carbon technologies

PATHWAY 3
Work with Queensland's regional communities

Response 5—Work with Queensland's regional communities to transition

Response 6—Skill Queenslanders for new economy jobs

Response 5 is focused on assisting regional communities with the following action items:

5.1	Build leadership capacity within communities to develop place-based climate transition roadmaps
5.2	Our Transition—provide tools, data and financial support for communities
5.3	Zero net pledges and Talking Transition program
5.4	Decarbonise remote communities
5.5	Work with local governments to build climate transition capacity

Mornington Island has an isolated electricity supply via two generators which are supplied by fuel tanks on-site. There is an opportunity to install a solar/battery to supplement and eventually replace the diesel generators, which will be investigated as part of the Mornington Island 2020 Master Plan.

Queensland Climate Adaption Strategy

The Queensland Climate Adaptation Strategy compliments the Queensland Climate Transition Strategy that will guide Queensland's transition towards a zero net emissions economy.

The strategy outlines a pathway for supporting local governments and regions which includes the Queensland Climate Resilient Councils and QCoast2100 program.

Queensland Strategy for Disaster Resilience

The Queensland Strategy for Disaster Resilience 2017 was developed by the Queensland Reconstruction Authority. Refer to Appendix L for a copy of the strategy.

The strategy identifies the State's disaster risk management policy with the following key objectives and outcomes:

Objective	Outcomes
Queenslanders understand their disaster risk	Queenslanders have access to up-to-date risk information, are better informed and better prepared for disasters.
Strengthened disaster risk management	The understanding and practice of disaster risk reduction is integrated within and across all sectors.
Queenslanders are invested in disaster risk reduction	Queenslanders are engaged and invested in efforts to reduce exposure to disaster risk and build resilience.
There is continuous improvement in disaster preparedness, response and recovery	Enhanced disaster preparedness for effective response, recovery and adaptation to changed environments.

HOUSING AND SOCIAL INFRASTRUCTURE

Aboriginal and Torres Strait Islander Housing Action Plan 2019-2023

The Aboriginal and Torres Strait Islander Housing Action Plan 2019-2023 aims to create housing outcomes to enable Aboriginal and Torres Strait Islander Queenslanders to prosper.

One of the items within the Action Plan is to develop place-based, community-led, local housing plans with communities to identify and respond to local housing challenges and priorities.

Designing of the Lardil Street Precinct Plan has considered a staged development as funding becomes available, refer to page 40 for further detail.

Active! Queensland 2019-2029

Activate! Queensland 2019-2029 is the Queensland Government's 10-year strategy outlining the new collaborative direction for physical activity and movement in Queensland. The strategy outlines practical, whole-of-government actions for the next three years.

The strategy includes the following action:

- Design a framework that identifies how precincts can provide support for Queenslanders, including children and young people from disadvantaged communities and Queenslanders located in regional and remote areas, enabling them to access quality physical activity opportunities.

The Active! Queesnland principles will help guide the design of the Lardil Street Precinct Plan.

COMMUNITY ENGAGEMENT

The Mornington Island Master Plan 2020 has undergone a number of stages of engagement. Department of Aboriginal and Torres Strait Islander Partnerships held an inception meeting on 13th November 2019 with some Mornington Shire Council staff members, some Councillors and the Mayor in attendance. Feedback from this considered in producing the draft Mornington Island Master Plan 2020 (Refer to Figure 13).

A further feedback session with Council and the community was held on 19th August 2020. Following this session, no amendments to the June 2020 Master Plan were proposed.

COMMUNITY NEEDS AND ASPIRATIONS

From discussions with Council in November 2019 and confirmed in August 2020, the following issues were noted:

- The lack of space for new housing
- The development of new Council chambers
- The proposed Barwu development to the north east of Gununa has high development costs
- The areas potential relocation of airstrip, which currently limits future development
- There are limited and high cost temporary accommodation options
- Previous Master Plan did not consider all of township comprehensively
- There are essential habitat constraints
- Ergon substation in the center and highly visible location of township
- There are limited aged care housing options limited
- A tourism precinct to be developed

Engagement was undertaken to develop the Barwu Concept Plan in 2018 with Gulf Region Aboriginal Corporation (GRAC) and Carpentaria Land Council Aboriginal Corporation (CLCAC). The following key services and facilities were desired at the time of developing the concept plan:

- Crisis housing
- Men's shed
- Cyclone Shelter
- Temporary accommodation (social housing)
- Tourist accommodation and caretaker residence
- Club house
- Offices
- Canteen
- Basketball courts
- Pool
- Gym
- Community hall/cultural centre
- Shops
- Seniors housing
- GRAC headquarters

Council identified the following opportunities and ideas in 2018, in conjunction with drafting the Mornington Island Master Plan:

- Expand/relocate arts centre
- Relocate Council chambers
- 16-18 new visitor accommodation units
- Relocate power station
- Seniors housing or aged care facility

If the Mornington Island airstrip is redeveloped for residential and community purposes instead of the Barwu Concept area, it is expected the previously noted services and facilities would be incorporated into the design. Engagement with the community and stakeholders will be undertaken to confirm the needs and aspirations are still current and desired.

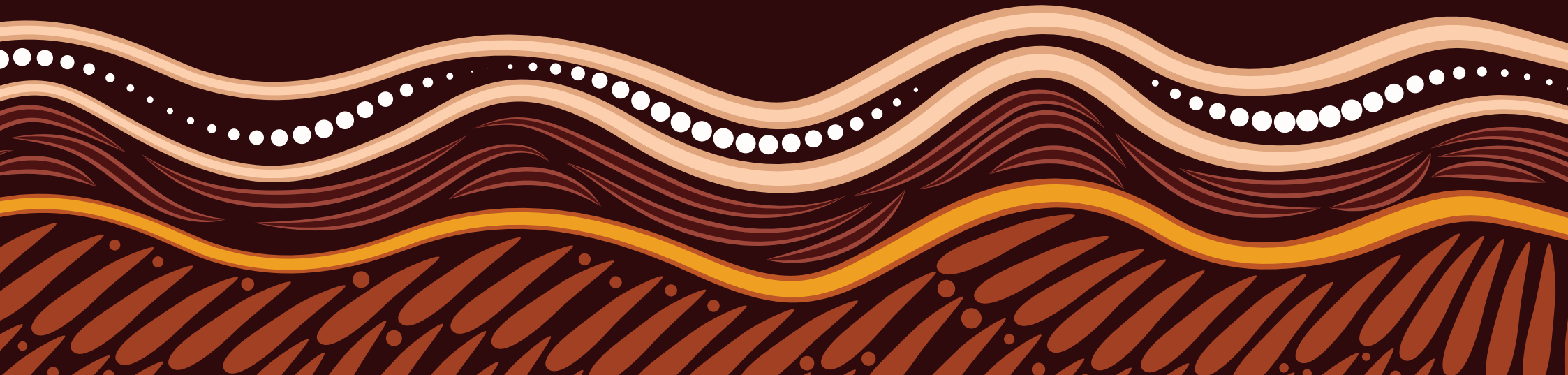
From the initial meeting Department of Aboriginal and Torres Strait Islander Partnerships held with Mornington Shire Council in November 2019 regarding the vision for the 2020 Master Plan, the below key ideas were noted:

- A tourism precinct to be designed near the water
- A recreational and commercial fishing business developed
- A splash park installed
- Better pedestrian access established
- Recreational space to be developed
- A greater variety of housing options to be developed
- Cheaper access to the Island (flights/boat)

Figure 13 is a visual representation of what was discussed at the meeting with Council. These ideas form the basis of this Master Plan. The vision was confirmed with Council and community members in August 2020.

Figure 13: Council Workshop notes, 13th November 2019

MORNINGTON ISLAND MASTER PLAN 2020 CONCEPT DEVELOPMENT



The following planning principles, designated land uses and draft concept plan is subject to further Council input and community engagement. Considering the community aspirations noted previously and existing planning documents for Mornington Island, the following planning principles have been developed for the 2020 master plan.

PLANNING PRINCIPLES

Why Draft Planning Principles?

It is expected the Planning Principles would be evaluated against any future development in Gununa, to help guide development in accordance with the vision of the community, stakeholders and Council. The principles have also been developed in consideration of the Mornington Shire Planning Scheme.

The **Planning Principles** aim to provide an overarching statement of policy, including context and background as to why that policy is required. The principles are supported by a set of objectives and acceptable responses that provide further information and direction.

Objectives describe the desired outcome of each Planning Principle and developers should consider how their development could meet these Objectives.

Acceptable Responses describe specific and practical actions to achieve the associated objectives.

1. Support housing stock growth

Housing stock in Gununa is limited and more developable land for residential development is required. Housing stock can be increased by supporting diversity in housing choices within the community.

The relocation of the airstrip would allow for further residential development and provide space and opportunity for redevelopment of other areas of the township.

Objective	Acceptable responses
1.1 Develop the Lardil Street Precinct Plan	a. The Lardil Street Precinct supports a variety of quality housing choices for residents. b. Residential lots have a minimum lot size of 800m^2. c. Uses for the medium density lots include aged care or independent living options for youth.
1.2 Encourage diversity in housing choices including lot sizes	a. A strategy for appropriate infill development, to increase housing stock within the established residential areas. b. Investigate the relocation of the power station to allow for residential infill development.

2. Promote economic growth

Tourism, commercial activities and industrial uses are all integral for employment opportunities.

The relocation of the airstrip would require the redevelopment of land around Cemetery Road for more compatible land uses. This opportunity allows for the expansion of the current industrial uses on Kaiadilt Street and Cemetery Road.

Objective	Acceptable responses
2.1 Grow tourism opportunities on the Island	a. Development of a new tourist and visitor information centre located at the existing airport terminal. b. Relocation of the Council chambers to the Gununa town centre to allow for the development of accommodation options centered around the jetty.
2.2 Expansion of Birri Road industrial precinct	a. Relocation of industrial uses at Kaiadilt Street and Cemetery Road to the Birri Road industrial precinct. b. Subdivision of the future industrial land provides for large lot sizes and wide road reserves. c. Industrial development is to include screening along the road frontage. Large sized lots and wide road reserves will be required.
2.3 Encourage growth of the Gununa town centre	a. Investigate opportunities for the redevelopment of vacant centre zoned land in the Gununa town centre.

3. Maintain a healthy, active and safe community

Development within Gununa should support maintaining a healthy, active and safe community through the expansion of existing facilities and new opportunities.

The community has identified a need for new recreation areas.

Objective	Acceptable responses
3.1 Establish new recreational land uses for community use	a. Investigate the most suitable location for new recreation spaces including a splash park.
3.2 Support the expansion of the existing health facilities	a. Investigate opportunities for aged care facilities.

4. Minimise adverse impacts of development on the environment The natural environment	
Objective	Acceptable responses
4.1 Minimise the impact on the natural environmental values	a. The design and engineering of development responds to the lands physical constraints and adequately demonstrates how potential adverse environmental impacts will be avoided. b. Development is set back from waterways and wetlands. c. Undertake an investigation to determine essential habitat constraints.

5. Builds community resilience to climate change and extreme weather events Climate change and natural disaster resilience are key considerations to future development. Development should consider the future impacts of climate change and increase community resilience to extreme weather events.	
Objective	Acceptable responses
5.1 Development is not subject to an unacceptable risk of natural hazards	a. Development should be located outside the erosion prone and storm surge zones. b. Development should consider bushfire risk.
5.2 Development should be designed and sited for thermal comfort	a. Dwellings should provide a shaded area, capture breezes and encourages natural ventilation.

LAND USE

The following land uses have been considered as appropriate and a description for each is provided below.

Community facilities

As identified in the Mornington Shire Planning Scheme, the purpose of a community facility zone is to provide for community related activities and facilities whether under public or private ownership. The zone should incorporate health and education precincts, the airport and government services.

The provision of community facilities is important, particularly in smaller townships. The community relies on these locations for physical and social wellbeing. In consultation with the community, guidance will be sought as to what locations may be appropriate for community facilities. An expansion of the existing health facilities will be proposed, in a location that is accessible to residents.

Open space and recreation

The purpose of the recreation and open space zone is to provide sporting, recreation, leisure, cultural and educational activities. The zone includes existing playing fields and parks. Should the Mornington Island airstrip be relocated, and the space used for residential development, provisions will need to be made for additional open space and recreation areas.

To enhance tourism opportunities, adequate recreation spaces will need to be identified to enhance the aesthetics and liveability of the community. A tourist and visitor information precinct as well as a splash park have been identified as new recreational land uses desired by the community in Gununa.

In consultation with the community and Council, it will be queried whether further recreation and open space areas may be required.

General residential

The purpose of general residential land uses is to provide for residential activities supported by a range of community uses and small-scale services and facilities that cater for residents.

Housing stock in Gununa is limited. A new residential subdivision is tentatively proposed named Lardil Street Precinct Plan, which would be located where the airstrip is currently. It should be noted the previously developed 2018 Barwu Concept Plan also identified additional residential lots.

The Lardil Street Precinct Plan proposes the following:

- 102 new residential lots (low density residential) - 800m^2
- 2 new residential lots (low density residential) - 870m^2
- 4 new residential lots (medium density residential) - 900m^2
- 2 new residential lots (medium density residential) - 1000m^2
- 2 new residential lots (medium density residential) - 1100m^2
- 3 new residential lots (medium density residential) - 2000m^2

Large residential subdivisions should adjoin open space and recreation areas. Provision will be made for several lots to be designated as parks/playground. The proposed medium density lots may be used for aged care or independent living options for youth. It is important adequate provision is made for pedestrian and vehicular access, particularly for aged care access to health services.

Industrial

According to the Mornington Shire Planning Scheme, the purpose of industrial zoning is to provide service, low, medium, or high impact industrial uses. The current zoning includes existing industrial uses at the Council depot and jetty.

An expansion of industrial zoned land is proposed to the north. It is noted this land adjoins the main road to the north of the township and therefore, provisions should be made for some screening to occur along the road frontage. Large sized lots and wide road reserves will be required.

The total number of industrial lots proposed, is as follows:

- 41 industrial lots 1,000 - 1,500m^2
- 6 industrial lots 1,500 - 2,500m^2
- 16 industrial lots 3,000 - 4,000m^2

The above varying lot sizes will ensure there area a variety of options depending on the proposed industrial uses.

Commercial centre zone

The purpose of a commercial centre zone is to provide for a mix of uses and activities, including, business, retail, professional, administrative, entertainment, cultural and residential activities. The current centre zone includes the existing retail uses.

The town centre is designated as a commercial zone. There may be opportunity to designate some of the land to the north as commercial, if required.

Environmental management and conservation zone

The purpose of the environmental management and conservation zone is to provide for areas identified as supporting significant biological diversity and ecological integrity. The zone incorporates most of the undeveloped land.

LOT SIZES

A variety of lot sizes are proposed throughout Gununa. Examples of the lot sizes are shown in Figure 14; example images will also be used during community engagement activities.

Figure 14: Lot size examples

MORNINGTON ISLAND MASTER PLAN 2020 CONCEPT

The following mapping has been developed pre-community engagement, therefore it is expected further changes will be required.

A copy of the Barwu Concept Plan, including mapping and infrastructure details is included in Appendix F.

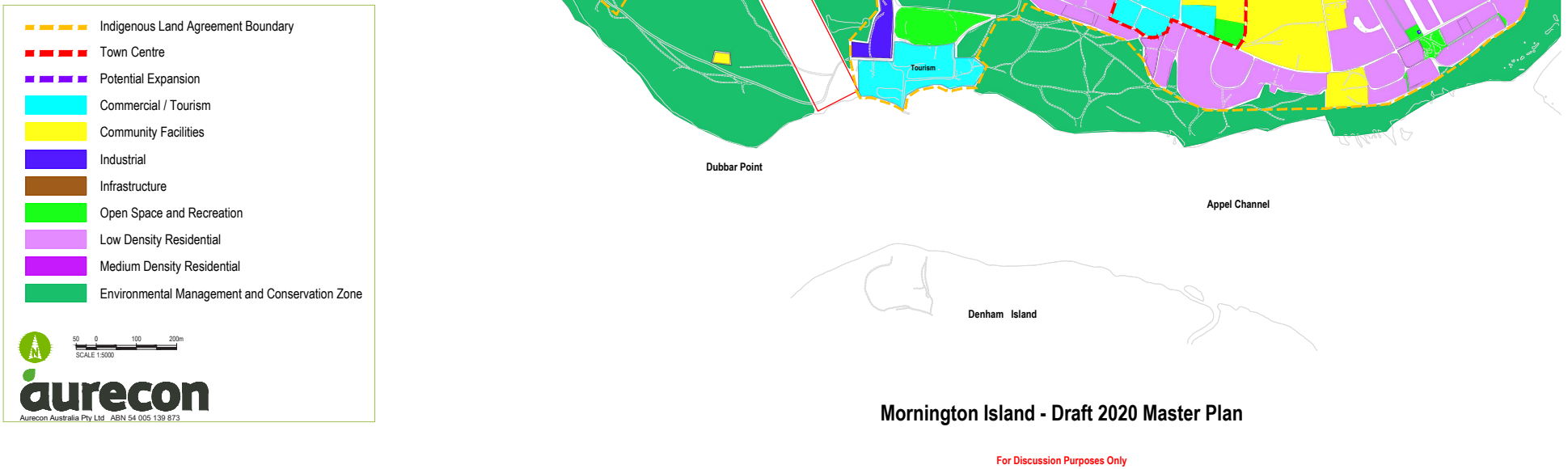


Figure 15: Mornington Island Master Plan 2020 as developed to date

BARWU CONCEPT PLAN

The Barwu Concept Plan was developed in 2018 and adopted by Council.

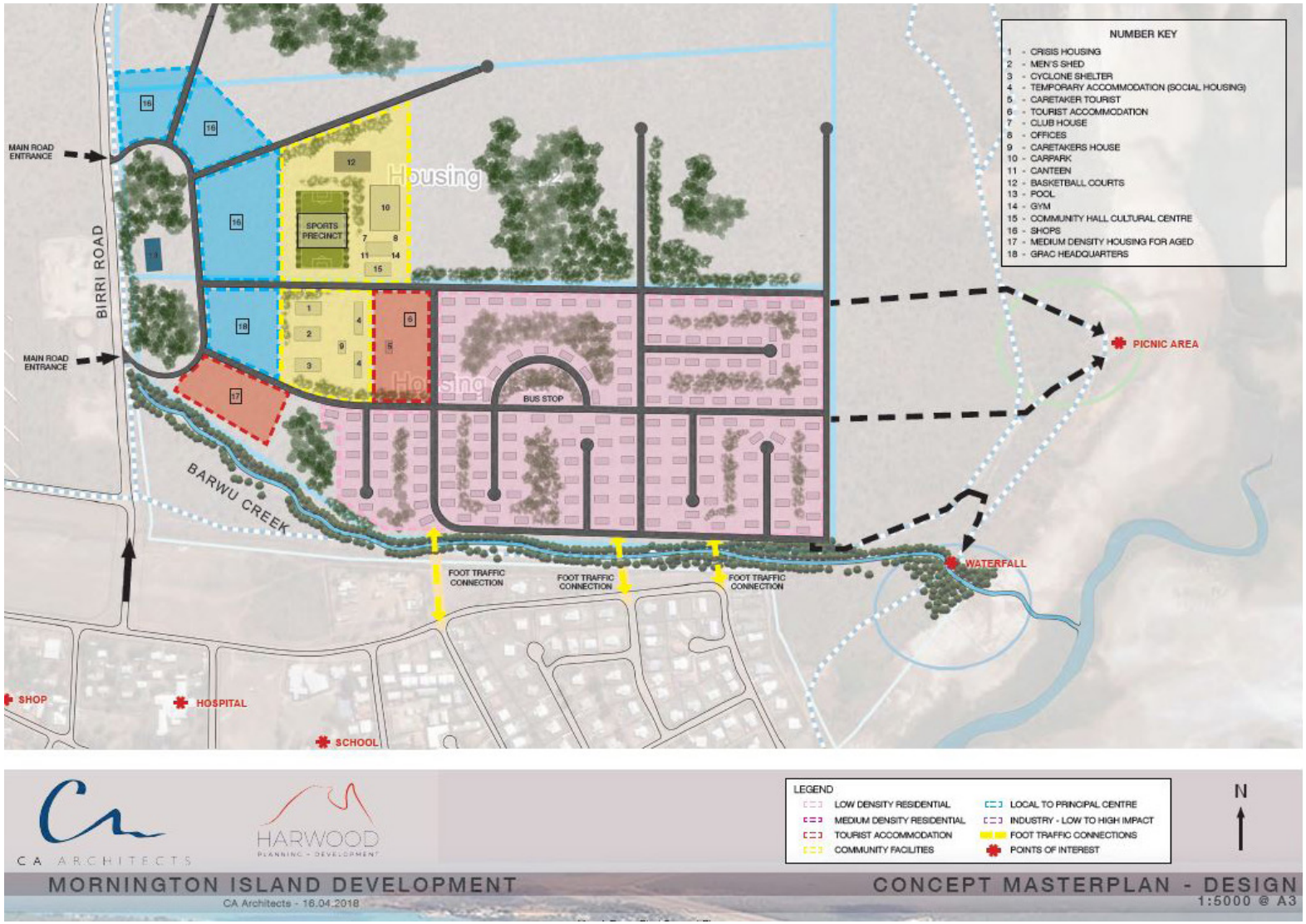


Figure 16: Barwu Concept Plan

LARDIL STREET PRECINCT PLAN

The Lardil Street Precinct Plan has been developed on the presumption that Council will endorse the relocation of the current airstrip. The relocation of the airstrip would effectively free the land for new residential housing and green space development. Approval and further correspondence will need to occur with Council before finalising any element of this precinct plan.

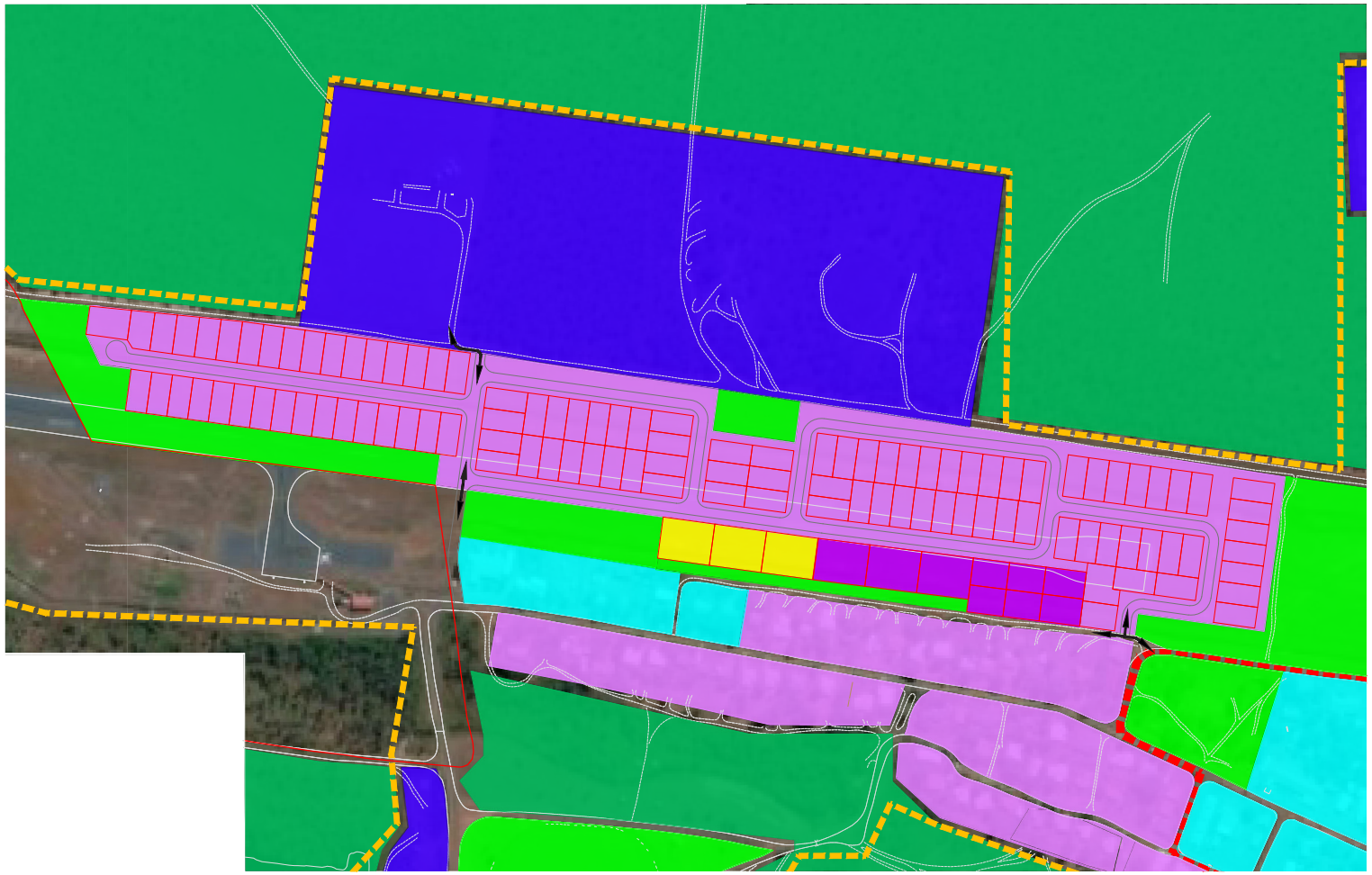


Figure 17: Draft Lardil Street Precinct Plan

Lardil Street Precinct Plan – Staged development

The precinct plan has considered a staged development approach, which will allow for development to occur as funding becomes available. Whilst the entire precinct has been designed to provide a range of different land uses in the most appropriate location, each stage is self-sufficient, without the need for further development to occur. Refer to Figure 17 Lardil Street Precinct Plan – Staged development, that shows the proposed first two stages of development.

Stage 1 includes 10 residential lots each 800m^2, an open space lot 8935m^2 and a new road which connects to the existing road network to the south. Stage 2 proposes 10 residential lots each 800m^2, as well as a new road that connects to existing industrial uses to the north.

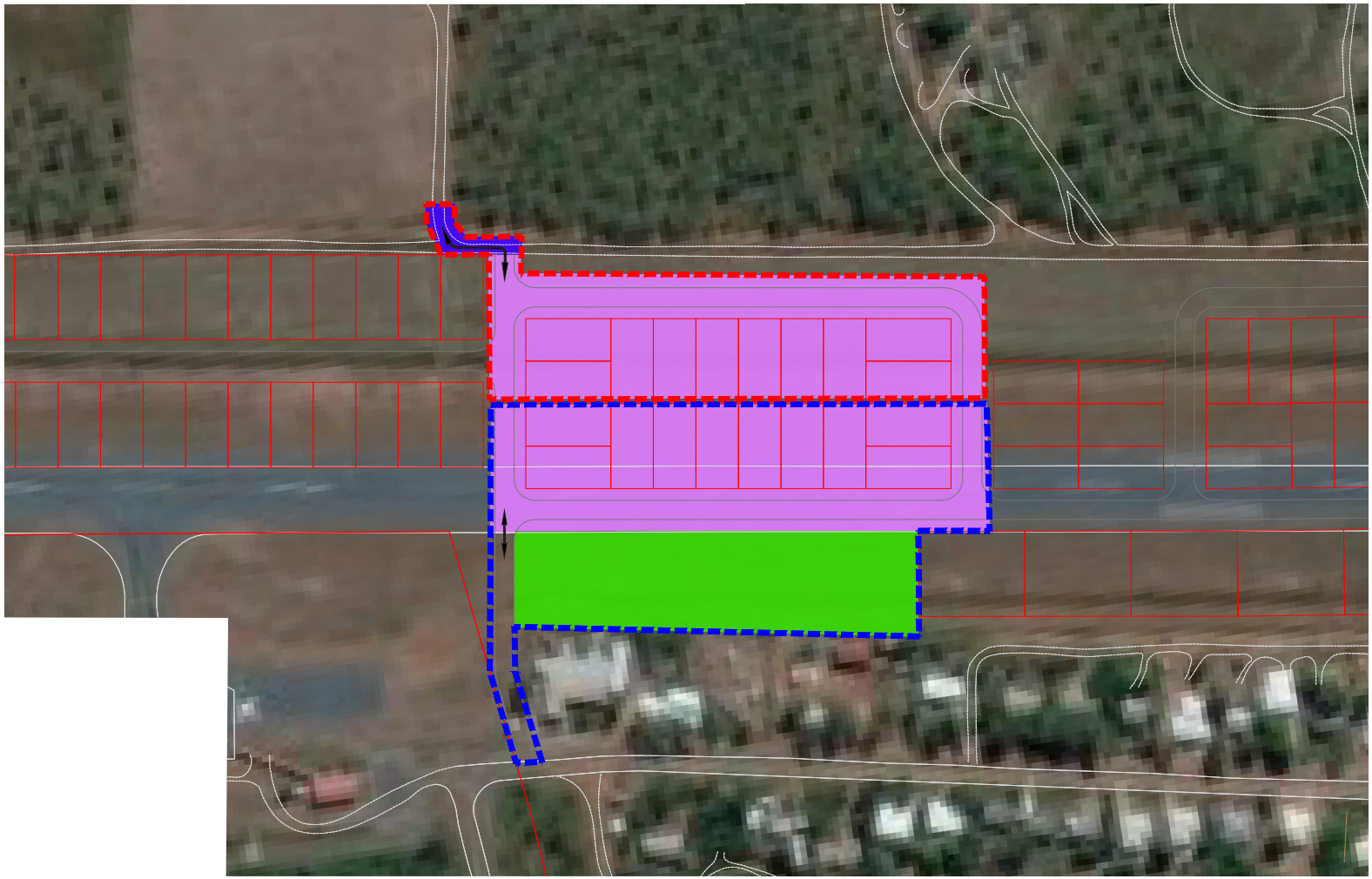


Figure 18: Lardil Street Precinct Plan – Staged development

TOWN CENTRE PRECINCT PLAN

Festival Grounds

Open meeting place

Lardil Street shops

Including grocery store, variety store, butcher & cafe

Health Services

Mornington Island Rural Hospital including nurses accommodation

Residential

Multiple dwelling residential

Civic Centre

Proposed new Council chambers & administration building including splash park and library.

Pedestrian Links

TOWN CENTRE PRECINCT PLAN

The Vision

The vision for the Gununa town centre is a services and community hub with a focus on shops, offices, public open space, community uses and multiple dwelling residential.

The town centre should be:

- *a safe and comfortable public space*
- *a focal meeting place for the local community*
- *safe pedestrian environment and accessible to all members of the community.*

The Gununa town centre precinct plan has been developed to help guide future funding and development.

Power station

The location of the power station within the town centre has a negative noise and visual impact. The relocation of the power station will allow for the redevelopment of the lot for multiple dwelling housing.
Visual screening - solid fence or landscaping - may offer an interim solution.

Power station screening

Focal meeting place for the local community

The Festival Grounds is a focal meeting point for the community.
The grounds should maintain its open space nature provide durable, low profile street furniture with appropriate seating.

Solar street lights

Safe pedestrian environment and accessible to all members of the community

A safe all-abilities pedestrian access should be established on Lardil Street linking the Festival Grounds, the Lardil Street shops, Civic Centre and the Health Precinct.
The pedestrian link should be shaded and provide appropriate seating.
The area is a high pedestrian area and distinct off-street car parking areas will assist in reducing vehicle-pedestrian conflict.

Shaded pedestrian link

Safe and comfortable public space

Security measures including fencing should maintain open, transparent street frontages.
Reliable lighting along the street frontages and at the Festival Grounds could be provided with solar solutions.

Examples of public meeting places

A stage may also be utilised for events.

Public stage

TOURISM ON MORNINGTON ISLAND

Mornington Island's key tourism assets are the airport and the jetty.

The existing tourism accommodation is located on the foreshore next to the jetty within a close distance to the airport and the Arts Centre.

There are future opportunities for visitor camping at the dam located north of Gununa.

- Airport
- Jetty & Barge
- Tourism Precinct
- Arts Centre
- Pedestrian Links
- Dam

TOURISM PRECINCT PLAN

The Vision

The vision for the tourism precinct is a re-purposed area with a focus on fishing-based tourism.

Tourism Accommodation

The existing accommodation is of an appropriate style and scale for tourist use. The location takes advantage of the foreshore location.
The existing Council administration building could be repurposed as caretakers or administration offices.

Dining and events space

There is an opportunity to provide a dining area and an events space at the canteen building.
An events space could host large gatherings and cooking classes.

Open Space

An area of open space located between the jetty and the accommodation will take advantage of the coastal views.
The open space area could include outdoor seating and a filleting table.

Jetty & Barge

Tourism Precinct

Existing accommodation

Example outdoor seating

Example filleting table

Dining area example

Future Infill Development

One of the planning principles developed earlier in this chapter is to support housing stock growth, a way to do this is through infill development. Infill development when existing lots and land uses are resized and/or repurposed for a higher density use, such as medium density aged care.

The Department of Aboriginal and Torres Strait Islander Partnerships completed an options analysis in January 2020 investigating the redevelopment of Lots 925 and 926 in the township for the purpose of subdividing into 3 lots and establishing 4 or 5 multiple dwellings. The development of similar undeveloped lots within the township, allows for a greater mix of land use densities, utilises locations that are close to existing services and facilities (such as health care and pedestrian access routes) and negates the need to develop outside the DOGIT boundary.

FUTURE INFRASTRUCTURE REQUIREMENTS

To allow for residential, industrial, commercial, community facilities, recreation and open space development of Gununa in conjunction with the master plan, upgrades to existing infrastructure and new infrastructure will become necessary. The additional infrastructure requirements have been based on the expected population increases and the likely demand per person for the infrastructure

This is detailed below.

Average Infrastructure Loadings		
Year	2019	2050
Population	1143	1608
Daily Water Demand (kL/day)*	1120	1540
Sewer loading (kL/day)	533	434
Minimum Power demand (kW/day)	TBC	TBC

*Assumes water conservation measures are not implemented

WATER SUPPLY

There are two aspects to consider for water supply; one is the volume of water available from the raw water sources and the other is the capacity to treat raw water. A reliability study has not been undertaken for some years, however previous reports have indicated that the extraction rate out of the Dithery Creek dam is too high and that an additional water supply volume is required. In addition, the volume of water currently used per person is considered extremely high, particularly in comparison to areas such as Cairns and South East Queensland. The implementation of a water conservation plan for Gununa should be considered in addition to increasing the storage capacity of the dam. A water conservation plan should include a community education program to reduce water usage and also infrastructure upgrades in housing such as low flow showers and dual flush toilets.

The current and predicted future water demand is outlined below.

Water Demand Scenario			
Parameter	Gununa Current Usage (900L/p/d)	Gununa Predicted Usage (900L/p/d) 2050	Gununa Predicted Usage (500L/p/d)* 2050
Average Day Demand (kL)	1120	1540	860
Mean day Maximum Month (MDMM) (kL)	1679	2305	1280
Peak Day (kL)	2517	3460	1935
Peak Hour (kL)	210	288	161
Delivery to Reservoirs (kL/hr) (MDMM in 20hrs)			
Delivery to Reservoirs (L/s)	20L/s		
Treatment Capacity (L/s) (MDMM in 20 hrs)	TBC		
Minimum Reservoir Storage Capacity (ML)	3.4		

*Assumes that demand management is undertaken

The Average Day water demand for Gununa is currently 1120kL with 1240 EP. Using 30-year projections, Average Day demand rises to 1540kL (1708 EP) in 2050. Current Water treatment capacity is 408ML/ year allowing for 1120kL use per day. Based on current population projections and current water usage, the Gununa water demand will exceed capacity by 2040, and therefore demand management should be implemented to avoid the need to upgrade prior to 2040.

The current water supply is chlorinated and dosed with sodium hydroxide. No other treatment is undertaken. At present when the dam levels fall or there has been an inflow from a rain event, the water quality can deteriorate due to high silt levels and other debris. This makes the disinfection process difficult and can make the water unpalatable. It is therefore recommended that additional treatment such as filtration been considered for the treatment plant.

SEWERAGE

Average Sewerage Demand (kL/day)	
Design Capacity of treatment plant	365
2011	470
2019	533
2050	434*

*Assumes demand management undertaken.

Maximum Sewerage Demand		
Year	2019	2050
Peak Wet Weather Flow (kL/day)	1625	2123
Peak Dry Weather Flow (kL/day) 241 297	747	993

The sewerage treatment plant was constructed with a design capacity of 1350 EP, with allowance to upgrade to a 1500 EP capacity if necessary.

Based on the potential future development for Gununa, an additional 115 sewer connections may be required for the community.

Based on the current capacity of the treatment plant, an upgrade to the plant is likely to be required in the next 10 years. This could be achieved with the additon of a third parallel treatment train.

An upgrade were to proceed, a development application may need to be lodged for assessment through Council.

SEA ACCESS

Sea access is critical to the success of Gununa, as this provides the most feasible way of bringing freight into the community.

Future tourism opportunities are strongly linked to boating and fishing.

While a new jetty has recently been constructed, further improvements will enhance the tourism experience and provide opportunities for the commercial and recreational fishing industry to expand.

The development of a pedestrian precinct plan would assist in providing linkages for tourists from the jetty area to other key areas in Gununa including accommodation, Council facilities, shops and art centres.

To assist with the movement of freight, tourists and other activities, a road network plan should also be considered.

STORMWATER DRAINAGE

The current stormwater drainage system is suitable for the existing infrastructure and there are no known issues associated with current drainage. Future developments will need to consider the stormwater design.

ELECTRICITY AND COMMUNICATIONS

Ergon is currently initiative the use of roof top solar systems within Gununa. While the update of this has only been modest to date, up to 290KVA of roof top solar can be supported in the community. Ergon is also considering the installation of a solar/battery system in Gununa to reduce the reliance on diesel generation. A large area in the industrial zone would be necessary for the solar system and would therefore necessitate the relocation of the power station.

The existing power station is located in the centre of the community, which is not ideal as it is noisy and unsightly. The land may be better utilised for residential or commercial purposes.

Each new lot proposed to be delivered under the master plan will also need to be provided with an underground supply from pad mount transformers to Ergon standards.

LANDFILL

The current landfill has sufficient space for the foreseeable future. Additional cells will need to be constructed at the landfill over the next 30 years, however this was considered in the landfill design and there is sufficient area available for this expansion.

Recycling and waste minimisation strategies should be considered for the community. This would extend the life of the landfill further and also provide improved environmental outcomes.

TRANSPORT

The existing road network is in a reasonable condition and supports the current population.

New roads will be required to support the proposed new subdivisions. These roads would be designed and constructed in accordance with the FNQROC Development Manual.

Airport

The location of the existing main runway is not ideally located from both an aviation and community perspective. Runways are ideally orientated in line with the predominate wind direction. The current runway is orientated approximately 90 degrees from the predominate wind direction and therefore requires aircraft to land with a high crosswind component. This can restrict some type of aircraft from landing or reduce their payload. In addition the current orientation requires aircraft movements to be over the community; this can be hazardous for the aircraft operations and can cause a nuisance to the community. Further expansion of the community is also restricted due to the separation requirements of the runway.

It is therefore proposed that the construction of a new runway be considered. This runway would be orientated in a more suitable direction for aircraft movements and would also reduce the hazards and nuisance associated with aircraft flying over the community.

The construction of a new runway would make the current runway obsolete and allow this area to be re-used for residential or other community uses. Current housing is unlikely to be impacted by the runway change, however additional planting and screening between the runway and the existing housing near the jetty should be included.

Further details of the runway assessment are included in Appendix M: Mornington Island Airstrip relocation investigation.

INFRASTRUCTURE COSTING ESTIMATES

The Mornington Island Master Plan 2020 proposes the creation of a number of new lots. Each of these new lots will require infrastructure service connections.

The following section sets out the estimated cost of creating these new connections, for the proposed number of new lots.

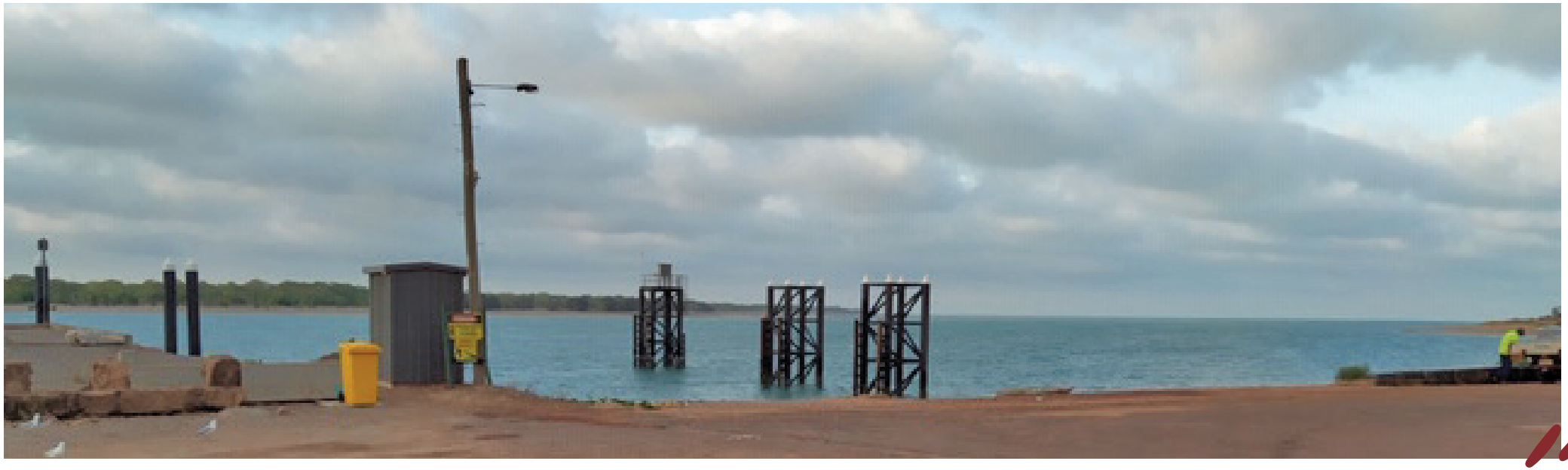
- 102 new residential lots (low density residential) - 800m^2
- 2 new residential lots (low density residential) - 870m^2
- 4 new residential lots (medium density residential) - 900m^2
- 2 new residential lots (medium density residential) - 1000m^2
- 2 new residential lots (medium density residential) - 1100m^2
- 3 new residential lots (medium density residential) - 2000m^2

The estimated cost for the development of the 115 residential lots is in the order of $10.5 million (excluding construction of the residential dwellings).

An industrial area has been proposed. A range of lot sizes have been proposed, to suit different industrial needs. A cost estimate based on approximately 60 potential lots has been developed, with a total cost of $11.5 million estimated to design and construct these lots. These estimates do not include the construction of any buildings or industrial facilities.

The proposed commercial areas are serviced by existing infrastructure. It is not expected that significant upgrades are required for these areas and therefore no costings have been attributed to these zones.

The creation of new residential and industrial lots is proposed to be staged, in order to reduce initial output costs and to gauge the timing and need of these new lots in the community.



POWER COSTINGS

The relocation of the existing power station is likely to cost in the order of $20 million. This is based on relocating into one of the proposed industrial areas and excludes the cost of obtaining land. It is assumed that a similar generation system would be installed, however it is possible that larger scale solar could also be utilised.

There is also the opportunity to expand the current use of rooftop solar in Gununa. This would reduce reliance on diesel generators and potentially reduce the cost of the relocation. Approximately 50 houses could benefit from solar, without impacting current supply, and this would cost in the order of $550,000.

WATER COSTINGS

A number of upgrades to the existing water supply system are recommended. This includes an expansion of the raw water supply, which may include expanding the current dam wall or excavating the existing dams. A reliability study may cost in the order of $200,000 and should be undertaken prior to confirm the raw supply upgrade estimate of $5 million. Augmentation of the existing treatment system should also be undertaken, including filtration. These works may cost in the order of $1.5 million.

In addition to the upgrade to the water supply it is recommended that a demand management program be put in place. This would include an education program and provision of water efficient devices to each household. A cost of $300,000 should be allowed for the demand management program.

SEWERAGE COSTINGS

An additional treatment train for the existing sewage treatment plant is recommended. This additional capacity is likely to be in the order of $2 million for construction.

GENERAL UPGRADES COSTINGS

- Splashpark - $1.5 million
- Visitor Information Centre - $3 million
- Jetty Improvements - $1 million
- Relocate council chambers - $3 million
- Improved signage, beautification works - $500,000

AIRPORT UPGRADE COSTINGS

The most significant infrastructure proposed in the Master Plan is the relocation of the existing runway. Further studies including geotechnical and aviation assessments are required before a more certain cost can be determined. However initial estimates are that the relocation could be in the order of $15-25 million. This is based on the existing terminal and taxiways being suitable for future use.

We note that Aurecon has no control over the cost of labour, materials, equipment or services furnished by others, or over Contractors' methods of determining prices, or over competitive bidding or market conditions. Any opinion or estimate of costs by Aurecon is to be made on the basis of Aurecon's experience and qualifications and represents Aurecon's judgement as an experienced and qualified professional engineer, familiar with the construction industry. Aurecon cannot and does not however, guarantee that proposals, bids or actual construction costs will not vary from Aurecon's estimates. These cost estimates relate to the infrastructure proposed in this Master Plan. Infrastructure costings for the previously proposed Barwu Development are not included here.

APPENDICES

Appendix A	Existing Infrastructure
Appendix B	Essential Habitat Mapping
Appendix C	Mornington Shire Planning Scheme Overlays
Appendix D	Engagement Documents
Appendix E	Mornington Island Master Plan
Appendix F	Barwu Concept Plan
Appendix G	Mornington Island Master Plan 2020
Appendix H	Lardil Street Precinct Plan - Mornington Island Master Plan 2020
Appendix I	Infrastructure Costings - Mornington Island Master Plan 2020
Appendix J	Mornington Shire Council Corporate Plan 2018-2023
Appendix K	Queensland Climate Transition Strategy
Appendix L	Queensland Strategy for Disaster Resilience 2017
Appendix M	Mornington Island Airstrip relocation investigation

MORNINGTON ISLAND

EXISITNG DRAINAGE INFRASTRUCTURE

FOR DISCUSSION PURPOSES ONLY

200 m

DRAINAGE INFRASTRUCTURE

Queensland Government Department of Aboriginal and Torres Strait Islander Partnerships

AECOM


N
MORNINGTON ISLAND
EXISITING ELECTRICITY INFRASTRUCTURE
FOR DISCUSSION PURPOSES ONLY
200 m
ELECTRICITY INFRASTRUCTURE
Queensland Government
Department of Aboriginal and Torres Strait Islander Partnerships
AECOM

MORNINGTON ISLAND

EXISITNG TRANSPORT INFRASTRUCTURE

FOR DISCUSSION PURPOSES ONLY

200 m

ROADS

Queensland Government Department of Aboriginal and Torres Strait Islander Partnerships

AECOM

N

MORNINGTON ISLAND

EXISITNG SEWER INFRASTRUCTURE

FOR DISCUSSION PURPOSES ONLY

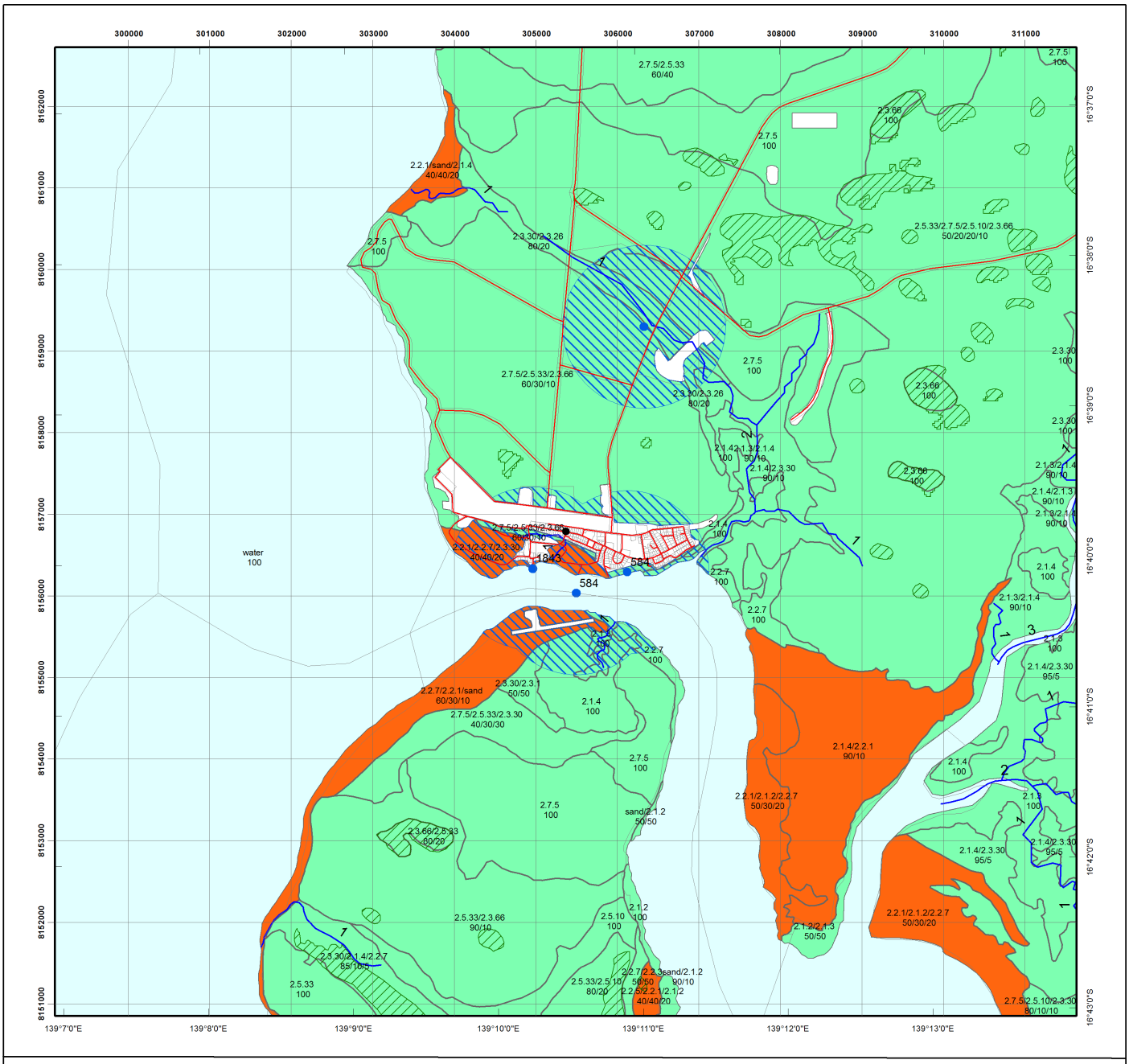
200 m

SEWERAGE INFRASTRUCTURE

Queensland Government Department of Aboriginal and Torres Strait Islander Partnerships

AECOM


N
MORNINGTON ISLAND
EXISITNG WATER INFRASTRUCTURE
FOR DISCUSSION PURPOSES ONLY
200 m
WATER INFRASTRUCTURE
Queensland Government
Department of Aboriginal and Torres Strait Islander Partnerships
AECOM



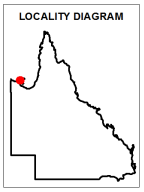
Vegetation Management Supporting Map

Legend

- Coordinates
- Category A or B area containing endangered regional ecosystems
- Category A or B area containing of concern regional ecosystems
- Category A or B area that is a least concern regional ecosystem
- Category A or B area under Section 20AH
  These areas are edged in yellow and filled with the remnant RE Status
- Category C or R area containing endangered regional ecosystems
- Category C or R area containing of concern regional ecosystems
- Category C or R area that is a least concern regional ecosystem
- Category C area under Section 20AI
  These areas are edged in purple and filled with the remnant RE Status
- Category X area
- Water
- Wetland on the vegetation management wetlands map
- Essential habitat on the essential habitat map
- Essential habitat species record
- Watercourses and drainage features on the vegetation management watercourse and drainage features map
  (Stream order shown as black number against stream where available)
- Roads
- National Parks, State Forest and other reserves
- Other land parcel boundaries

Queensland Government

LOCALITY DIAGRAM



N

0 480 960 1,440 1,920 2,400 m

This product is projected into:
GDA 1994 MGA Zone 54

Labels for Essential Habitat are centred on the area of enquiry.

Regional ecosystem linework has been compiled at a scale of 1:100 000, except in designated areas where a compilation scale of 1:50 000 is available. Linework should be used as a guide only. The positional accuracy of RE data mapped at a scale of 1:100 000 is +/- 100 metres.

Disclaimer:
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Additional information may be required for the purposes of land clearing or assessment of a regional ecosystem map or PMAV applications. For further information go to the web site: www.dnrme.qld.gov.au or contact the Department of Natural Resources, Mines and Energy.

Digital data for the vegetation management watercourse and drainage feature map, vegetation management wetlands map, essential habitat map and the vegetation management remnant and regional ecosystem map are available from the Queensland Spatial Portal at http://www.information.qld.gov.au/

Land parcel boundaries are provided as locational aid only.

Vegetation Management Act 1999 - Extract from the essential habitat database

Essential habitat is required for assessment under the:

- State Development Assessment Provisions - State Code 16: Native vegetation clearing which sets out the matters of interest to the state for development assessment under the *Planning Act 2016*; and
- Accepted development vegetation clearing codes made under the *Vegetation Management Act 1999*

Essential habitat for one or more of the following species is found on and within 1.1 km of the identified subject lot/s on the accompanying essential habitat map.

This report identifies essential habitat in Category A, B and Category C areas.

The numeric labels on the essential habitat map can be cross referenced with the database below to determine which essential habitat factors might exist for a particular species.

Essential habitat is compiled from a combination of species habitat models and buffered species records.

The Department of Natural Resources, Mines and Energy website (http://www.dnrme.qld.gov.au) has more information on how the layer is applied under the State Development Assessment Provisions - State Code 16: Native vegetation clearing and the *Vegetation Management Act 1999*.

Regional ecosystem is a mandatory essential habitat factor, unless otherwise stated.

Essential habitat, for protected wildlife, means a category A area, a category B area or category C area shown on the regulated vegetation management map-

1) that has at least 3 essential habitat factors for the protected wildlife that must include any essential habitat factors that are stated as mandatory for the protected wildlife in the essential habitat database; or

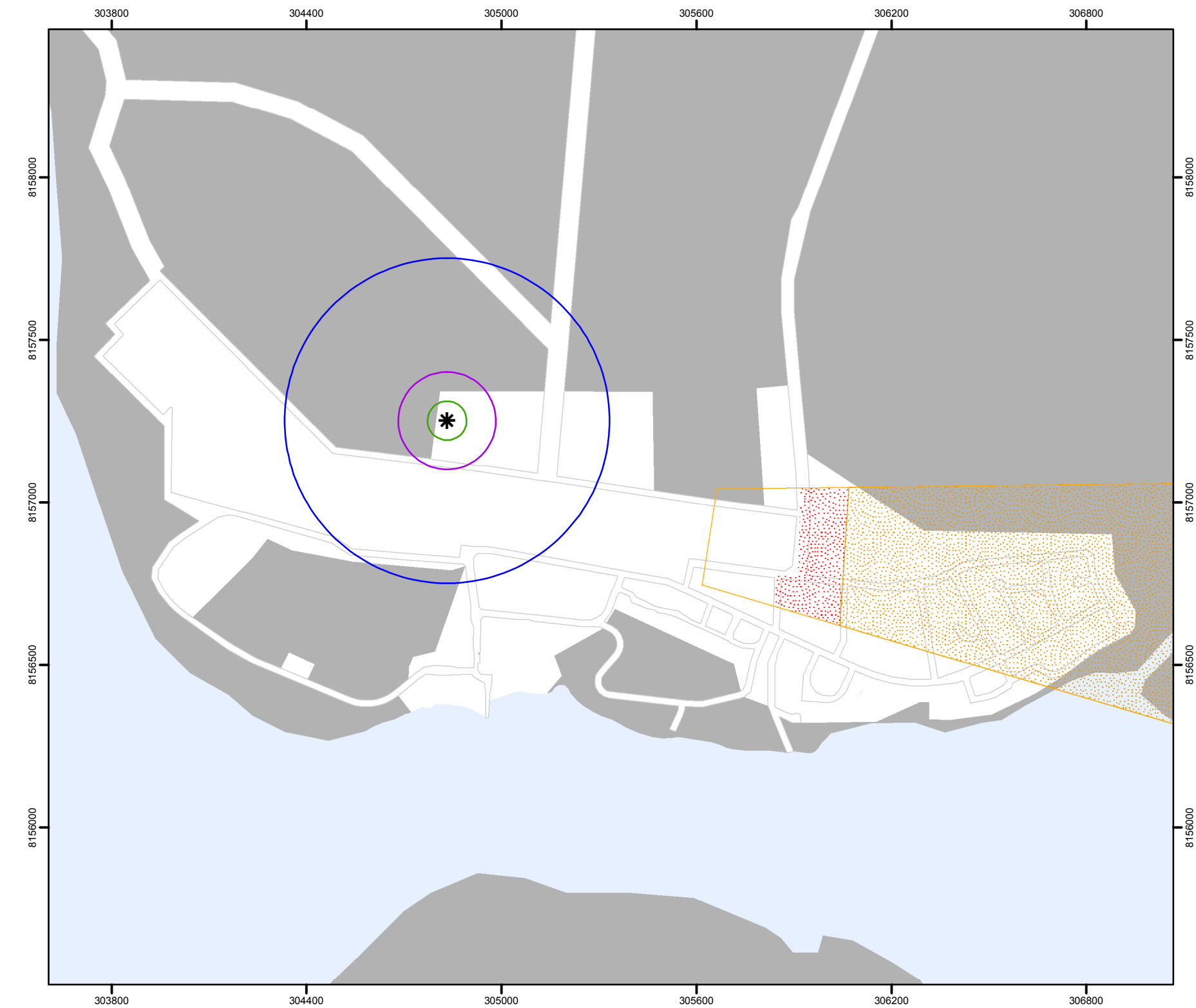
2) in which the protected wildlife, at any stage of its life cycle, is located.

Protected wildlife includes endangered, vulnerable or near-threatened native wildlife prescribed under the *Nature Conservation Act 1992*.

Essential habitat in Category A and/or Category B and/or Category C

Label	Scientific Name	Common Name	NCA Status	Vegetation Community	Altitude	Soils	Position in Landscape
584	Crocodylus porosus	estuarine crocodile	V	Estuaries and major rivers, billabongs and swamps in dry season; freshwater swamps in wet season, occasionally found in open sea; also in dune swale swamps and dams; mostly within 40-50km of coastline (some breeding populations up to 100km from sea). Nest sites vegetated areas (preference for Melaleuca swamp forest with Thoracostachyum or Scleria sedgeswamp &/or Stenoclaena fern) near permanent freshwater (<100-200m), often on north-west banks, prime areas associated with productive deepwater estuaries; will also use marginal sites, e.g. grassy areas (Imperata, Ischaemum, Themeda, Sorghum) near forest edge or with sparse eucalypt, riverbank/fringe forest (Melaleuca, Corypha, Acacia), mangrove fringe, salt meadow behind mangrove, and sparse short (<40cm) sedgeland/swamp.	Sea level to 100m.	None	Near and in waterbodies.
1843	Numenius madagascariensis	eastern curlew	E	Foraging on soft, intertidal mudflat, with a preference for broad flats, often in sheltered areas near mangroves and estuaries/creeks, also on sandflats and occasionally ocean beaches, rock platforms and coral reefs. Roost on saltflat, saltmarsh, mangroves, reef flat, sandy spits and grassland near water.	Sea level to 100m.	Sand, sandy mud and mud substrates.	Associated with coastlines and wetlands.

Label	Regional Ecosystem (mandatory unless otherwise specified)
584	All regional ecosystems within the stream/wetland buffer as determined by VMA code.
1843	2.1.1, 2.1.2, 2.1.3, 2.1.4, 2.1.5, 3.1.1, 3.1.2, 3.1.3, 3.1.4, 3.1.5, 3.1.6, 7.1.1, 7.1.2, 7.1.3, 8.1.1, 8.1.2, 8.1.3, 8.1.4, 11.1.1, 11.1.2, 11.1.3, 11.1.4, 12.1.2, 12.1.3



Mornington Shire Planning Scheme

Protected Features

- Non-directional beacon
- 500 metre buffer
- 150 metre buffer
- 60 metre buffer
- Take-off / approach path RWY 09/27

Height Restrictions

- Area A: Maximum - 5 metres
- Area B: Maximum - 8 metres

Data Source:
Based on or contains data provided by the (former) Department of Environment & Resource Management Queensland 2009 which gives no warranty in relation to the data (including accuracy, reliability, completeness or suitability) and accepts no liability (including without limitation, liability in negligence) for any loss, damage or costs (including consequential damage) relating to any use of the data.

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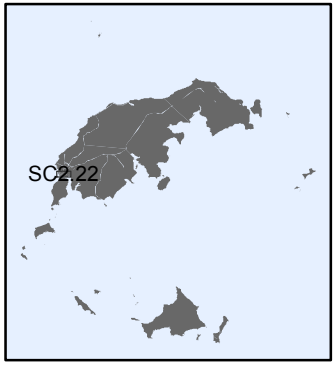
Coordinate System: GDA 1994 - MGA Zone 54

Scale at A4 1:15,000

N

0 125 250 500

Meters



SC2.22 Airport Environs Overlay

Mornington Shire Planning Scheme

Legend

- Urban
- Erosion Prone
- Sea Level Rise
- High Storm Tide Hazard
- Medium Storm Tide Hazard

Data Source:
Based on or contains data provided by the Queensland Government which gives no warranty in relation to the data (including accuracy, reliability, completeness or suitability) and accepts no liability (including without limitation, liability in negligence) for any loss, damage or costs (including consequential damage) relating to any use of the data.

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Coordinate System: GDA 1994 - MGA Zone 54

Scale at A4: 15,000

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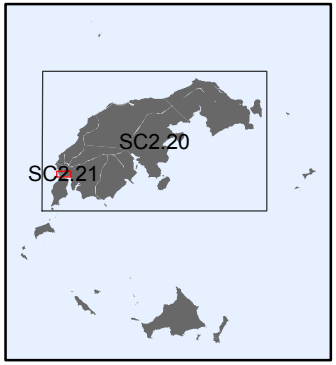
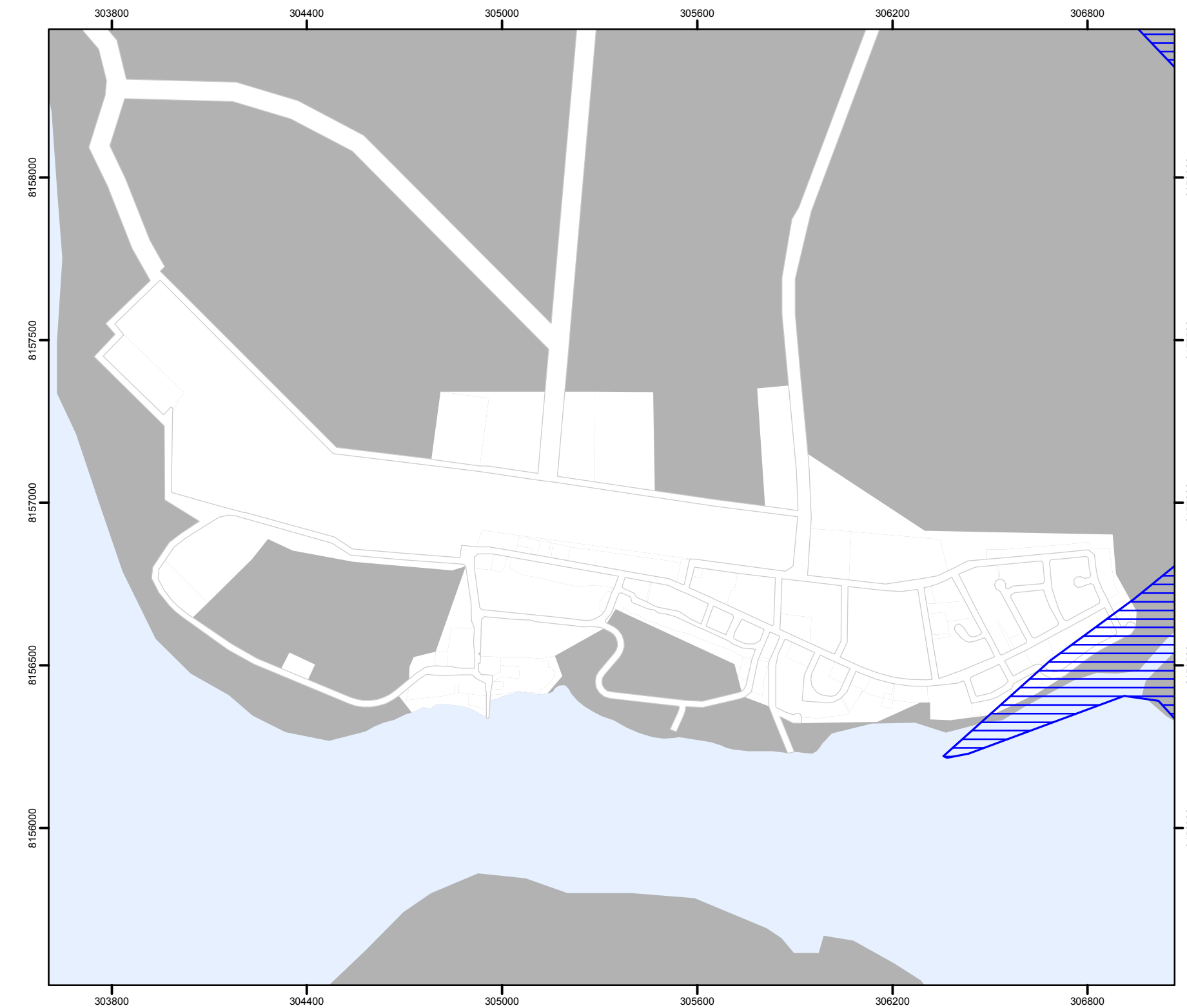
0 120 240 480
Meters



SC2.21 Coastal Protection Overlay - Gununa



Mornington Shire Planning Scheme

Legend

- Interim Floodplain Area
- Urban

Data Source:
Based on or contains data provided by the Queensland Government which gives no warranty in relation to the data (including accuracy, reliability, completeness or suitability) and accepts no liability (including without limitation, liability in negligence) for any loss, damage or costs (including consequential damage) relating to any use of the data.

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Coordinate System: GDA 1994 - MGA Zone 54

Scale at A4: 15,000

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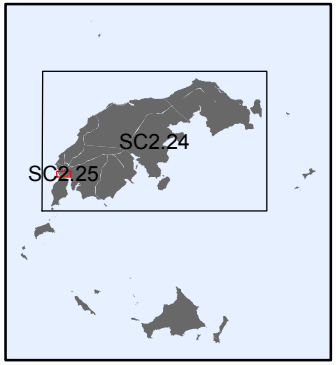
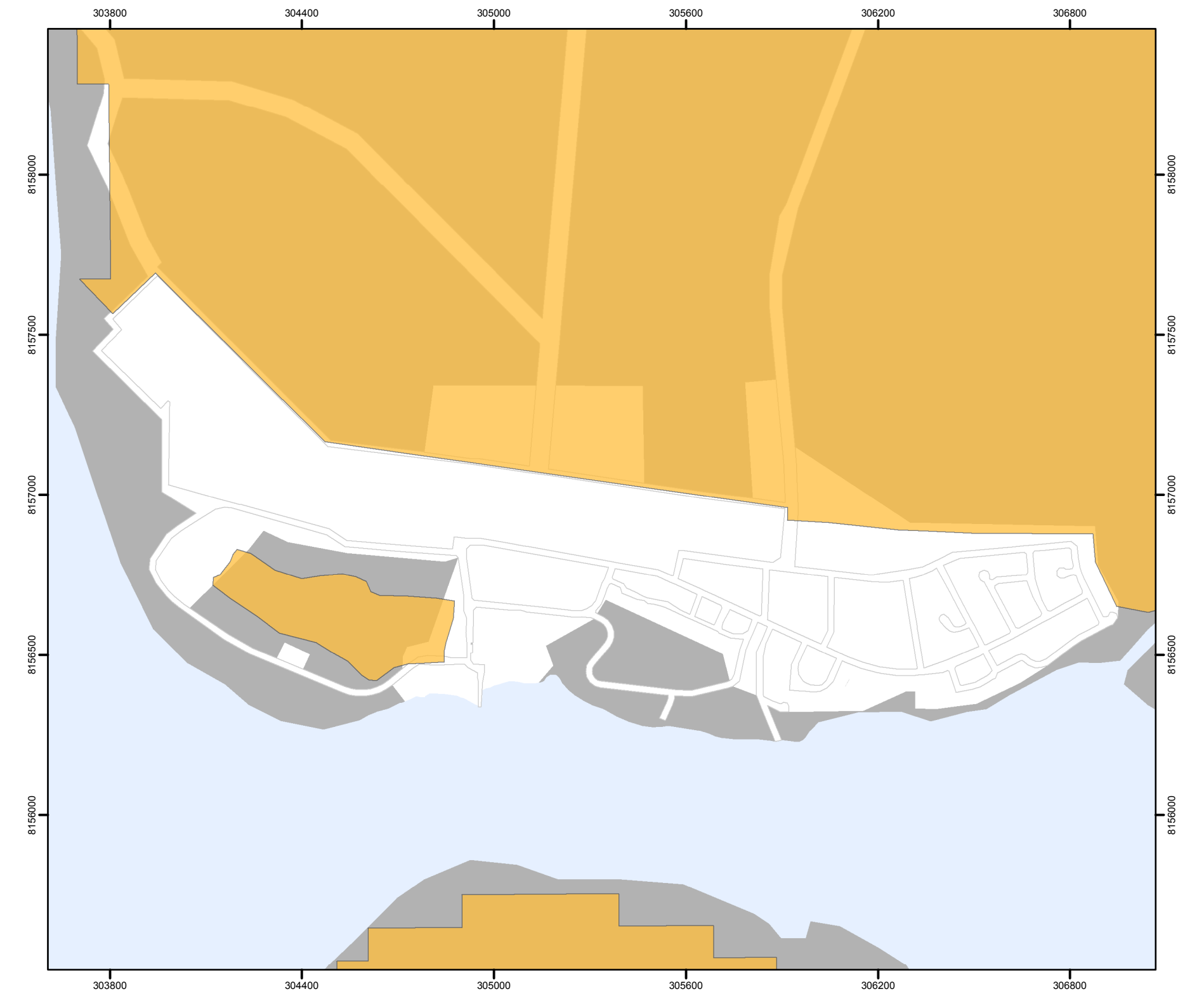
0 125 250 500

Meters



SC2.25 Interim Floodplain Area Overlay - Gununa



Mornington Shire Planning Scheme

Legend

Urban

Bushfire Risk

Medium

High

Data Source:
Based on or contains data provided by the Queensland Government which gives no warranty in relation to the data (including accuracy, reliability, completeness or suitability) and accepts no liability (including without limitation, liability in negligence) for any loss, damage or costs (including consequential damage) relating to any use of the data.

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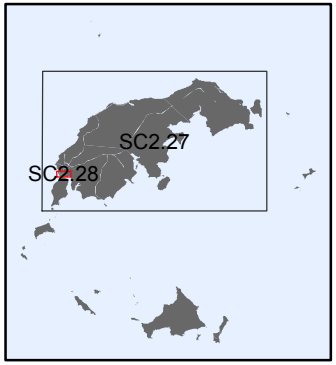
Coordinate System: GDA 1994 - MGA Zone 54

Scale at A4: 15,000

N

0 125 250 500

Meters



SC2.28 Bushfire Risk Area Overlay - Gununa

MORNINGTON ISLAND MASTER PLAN

What is a Master Plan?

A masterplan shows where there is suitable land for certain development such as residential, commercial and industrial.

A masterplan should consider existing relevant planning documents and consider the needs and vision of the community. Council can then use the masterplan document in the future, to guide development.

The following will be considered:

- *Is there a need for more housing and commercial and industrial businesses? If so, where should they be located?*
- *Is there a need for improved roads, pathways and cycle paths?*
- *Is the existing supply of water, sewerage and power adequate?*
- *Are there adequate community facilities? Is Cultural Heritage adequately protected, or can it be protected better?*
- *How can tourism be introduced to the Island?*

Why does Mornington Island specifically need a new master plan?

Mornington Shire Council want to plan for future development. As the township grows and there is a need for different services, Council want to ensure these are planned for and are in line with what the community would like..

Why do we need your input?

Mornington Island residents know what works in their town and what needs to be improved. Mornington Shire Council would like to engage with the community and seek their input on what they like about living on the Island, what needs to be improved and how they'd like development to occur in the future.

Will I have to pay more rent or move out of my house, because of this master plan?

No. The master plan will not impact existing residential uses within Mornington Island.

Does this mean development will start soon?

No. If Council receives funding for future projects, Council will refer to the master plan. The master plan will help guide development and mean the process will be faster at the planning stage.

How long until the master plan is completed?

Consultation with the community and stakeholders will is likely to occur in the latter half of 2020. The feedback will then be considered, and updates made to the mapping. It is expected Council will finalise the master plan draft in late 2020 and following this, the detailed engineering can be completed.

Queensland Government

MORNINGTON SHIRE COUNCIL

MORNINGTON ISLAND MASTER PLAN

Community Feedback

Mornington Shire Council would like your feedback, to help us understand what is important to you and your community.

What do you like most about living and/or working in Mornington Island?

_____

_____

_____

What do you think needs to be improved on the Island?

_____

_____

_____

Which of these options would improve the community of Coen and why? (please circle no more than four)

- Aged care facility
- Multi-cultural centre
- Children's playground
- Outdoor basketball court
- Recreation/park areas
- Speed humps/speed control
- Community gardens
- Local history talks for tourists
- Street numbers on houses
- Exercise/walking tracks
- Murals on walls by local artists
- Tourist information centre
- More signage
- Solar power plant

Anything else?

_____

_____

_____

Please circle which of the below you think Mornington Island needs? (please circle no more than four)

- More camp sites
- Powered camp sites
- Sheltered BBQ and picnic areas
- Wash bay area
- Walkways
- Wheelchair accessible pathways
- Better signage
- Better street lighting

More shops:

- Bakery
- Butcher
- Convenience store
- Local art store

More services:

- Service station
- Chemist
- Doctors

Anything else?

_____

_____

_____

Would you support any of these ideas? (please circle)

- Monthly markets
- Renewable/Hydro energy
- Youth centre
- Community church
- New Cemetery

Anything else?

_____

_____

_____

Lot sizes

For new lots in Mornington Island, which of the following housing types do you prefer (please number 1 to 4 in order of preference, 1 being the most important):

_____ 3 bedroom house
_____ 4 bedroom house
_____ 2 and 3 bedroom duplexes
_____ 1 and 2 bedroom unit complexes

MASTER PLAN MORNINGTON ISLAND

Why does Mornington Island need a masterplan?

Mornington Shire Council would like to plan future development on Mornington Island. As the township grows and there is a need for different services, Council want to ensure these are planned for and are in line with what the community would like.

Why do we need your input?

Mornington Island residents know what works in their community and what needs to be improved. Mornington Shire Council would like to engage with the community and seek their input on what they like about Mornington Island, what needs to be improved and how they'd like the area to develop into the future.

Mornington Shire Council would appreciate your help in answering some questions about Mornington Island.

Please visit the "location":

Day date time or

Day date time

We look forward to seeing you there

For more information contact xxxxxxxxxxx:
EMAIL at xxxxxxxxxxxx or PHONE on xxxxxxxx

LAND USE SUMMARY

Residential Development

It is understood housing stock in Mornington Island is limited. A new residential subdivision titled 'Lardil Street Precinct Plan' is proposed in the draft master plan, noting the expansion of the township is somewhat constrained due to an existing DOGIT.

Residential subdivisions should adjoin open space and recreation areas. Provision will be made for several lots to be designated as parks/playground.

The proposed medium density lots may be used for aged care or independent living options for youth. It is important that adequate provision is made for pedestrian and vehicular access, particularly for aged care access to the CBD area.

Commercial/ Tourism

The *Mornington Shire Planning Scheme* designates commercial land in the centre of the township. It is noted the provision of further commercial areas would be required in the future. A portion of new lots to the south of the Lardil Street Precinct area are identified as commercial, which will complement the adjacent airport and link towards the existing CBD area.

The Mornington Shire Planning Scheme Shire Strategic Plan Map for Gununa identifies area to the south, near the jetty, as future tourism. It is proposed this tourism area is expanded, to make the most of the ocean front location and proximity to the airport.

- mention new Council chambers?

Industrial Development

The *Mornington Shire Planning Scheme* designates industrial land to the south of township and a small parcel to the north east. An expansion of both these areas is proposed. It is noted that both locations are reasonably visible to the road and/or tourism area, therefore some open space/screening may be required to reduce visual impact.

Large sized lots and wide road reserves will be required.

Open Space and Recreation

Further recreation and open space areas are proposed in the Lardil Street Precinct area (which would act as a buffer from the proposed new residential areas, to the airport and commercial areas).

In consultation with the community, we will be seeking guidance as to where other recreation and open space areas may be required.

Community Facilities

The provision of community facilities is important, particularly in smaller townships. The community relies on these locations for physical and social wellbeing. In consultation with the community, we will be seeking guidance as to what other locations may be appropriate for community facilities.

An expansion of existing health infrastructure may be proposed, which needs to be in a reasonably central location and accessible to the proposed residential areas.

Queensland Government

MORNINGTON SHIRE COUNCIL

LAND USE EXAMPLES

Detached house

Caravan Park

Industrial sheds

Detached house

Open space - playground

Industrial sheds and laydown area

Units

Open space - sport and recreation

Commercial buildings - shop and office building

Queensland Government

MORNINGTON SHIRE COUNCIL

- Residential (low density)
- Residential(medium density)
- Recreation
- Industrial
- Commercial
- Conservation/Buffer
- Community (eg - cemetery)

Queensland Government

MORNINGTON SHIRE COUNCIL

WELCOME

Mornington Island Masterplan

Community Information Session

DAY DATE TIME – TBC

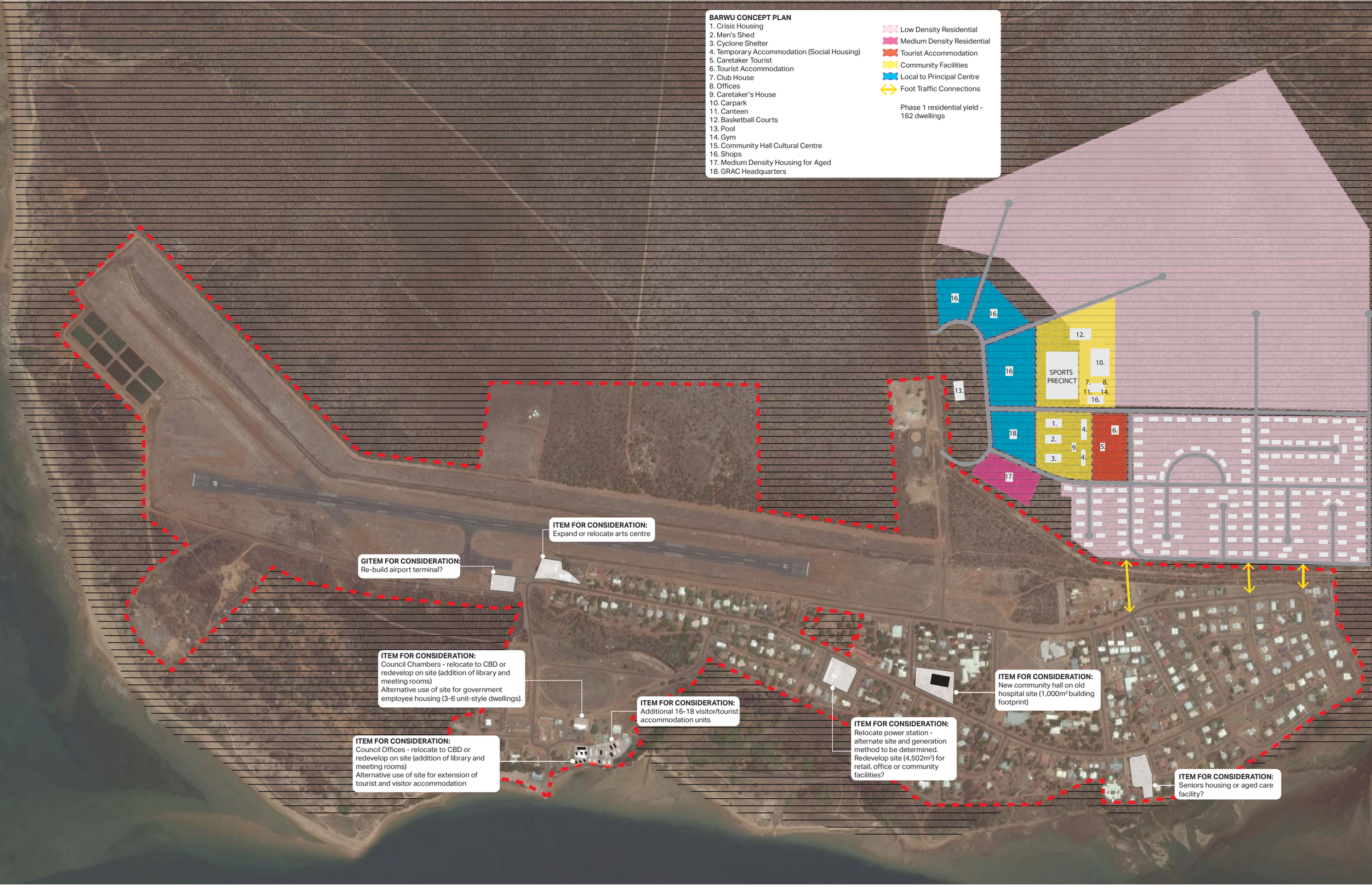
DAY DATE TIME – TBC

BARWU CONCEPT PLAN

1. Crisis Housing
2. Men's Shed
3. Cyclone Shelter
4. Temporary Accommodation (Social Housing)
5. Caretaker Tourist
6. Tourist Accommodation
7. Club House
8. Offices
9. Caretaker's House
10. Carpark
11. Canteen
12. Basketball Courts
13. Pool
14. Gym
15. Community Hall Cultural Centre
16. Shops
17. Medium Density Housing for Aged
18. GRAC Headquarters

Low Density Residential
Medium Density Residential
Tourist Accommodation
Community Facilities
Local to Principal Centre
Foot Traffic Connections

Phase 1 residential yield - 162 dwellings



N

MORNINGTON ISLAND

FOR DISCUSSION PURPOSES ONLY

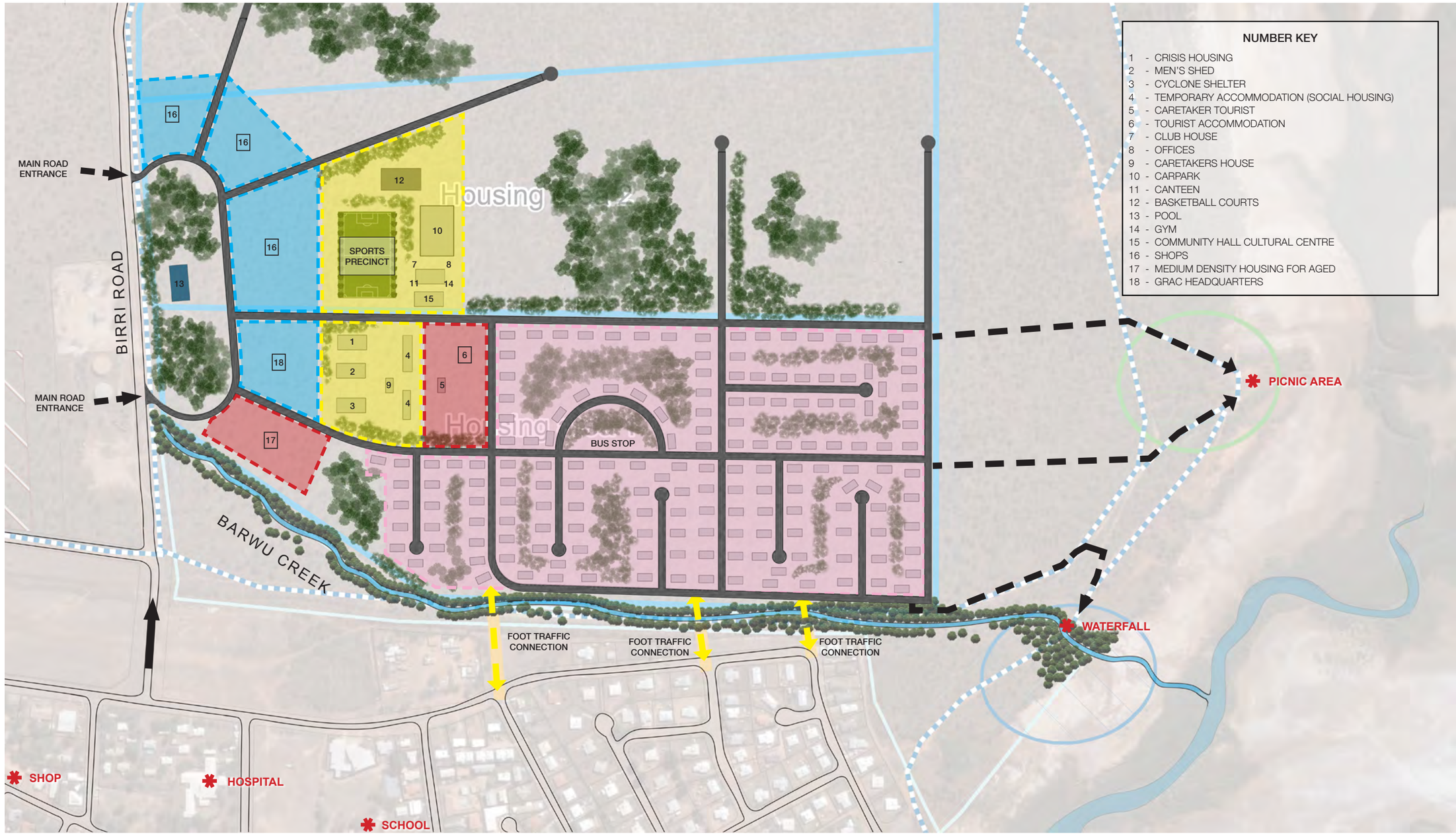
200 m

Native Title determination area

Queensland Government
Department of Aboriginal and Torres Strait Islander Partnerships

AECOM

FINAL CONCEPT PLAN



CA ARCHITECTS

HARWOOD PLANNING + DEVELOPMENT

MORNINGTON ISLAND DEVELOPMENT

CA Architects - 16.04.2018

CONCEPT MASTERPLAN - DESIGN

1:5000 @ A3

Map 4. Barwu Final Concept Plan

HARWOOD PLANNING + DEVELOPMENT

BARWU LOCALITY MAP

CA ARCHITECTS

HARWOOD PLANNING + DEVELOPMENT

MORNINGTON ISLAND DEVELOPMENT

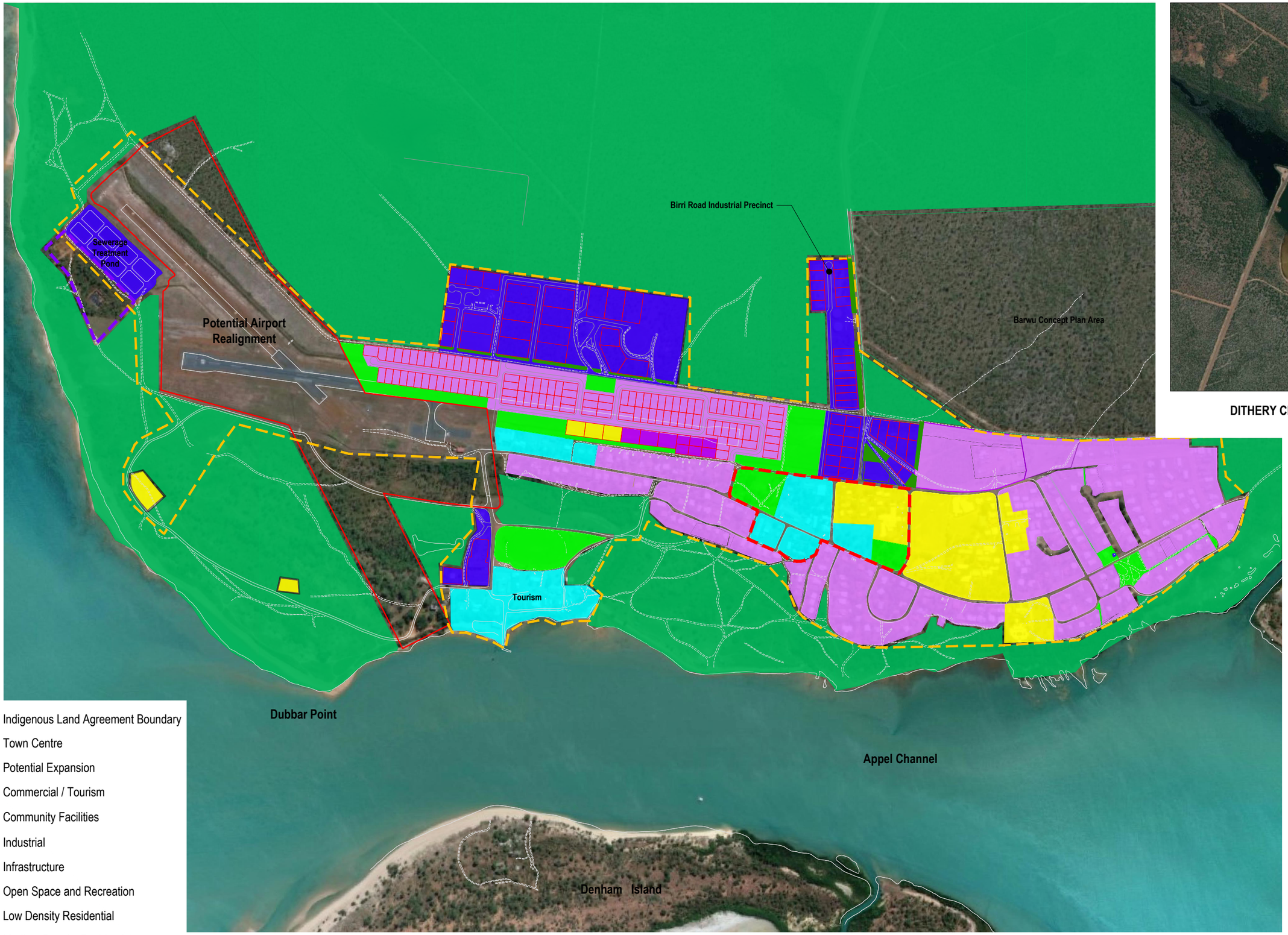
CA Architects - 16.04.2018

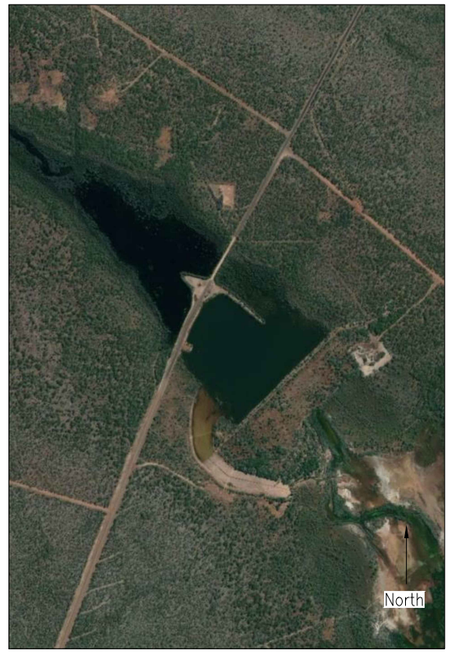
CONCEPT MASTERPLAN - DESIGN

1:10000 @ A3

Map 5. Barwu Locality Map

HARWOOD PLANNING + DEVELOPMENT





DITHERY CREEK DAM 2.2km
N.T.S.

- Indigenous Land Agreement Boundary
- Town Centre
- Potential Expansion
- Commercial / Tourism
- Community Facilities
- Industrial
- Infrastructure
- Open Space and Recreation
- Low Density Residential
- Medium Density Residential
- Environmental Management and Conservation Zone

50 0 100 200m
SCALE 1:5000

Mornington Island - Draft 2020 Master Plan

REV	DATE	REVISION DETAILS
A	24/01/2020	DRAFT ISSUE
B	30/01/2020	DRAFT ISSUE
C	31/01/2020	DRAFT ISSUE
C	05/02/2020	DRAFT ISSUE

For Discussion Purposes Only

Aurecon Australia Pty Ltd ABN 54 005 139 873

- Indigenous Land Agreement Boundary
- Town Centre
- Potential Expansion
- Commercial / Tourism
- Community Facilities
- Industrial
- Infrastructure
- Open Space and Recreation
- Low Density Residential
- Medium Density Residential
- Environmental Management and Conservation Zone

Mornington Island - Lardil Street Precinct Plan

REV	DATE	REVISION DETAILS
A	05/02/2020	DRAFT ISSUE

For Discussion Purposes Only

aurecon
Aurecon Australia Pty Ltd ABN 54 005 139 873

Draft Infrastructure costings

Item	Details	Estimated costs
New residential lots	115 new residential lots: ■ 102 new residential lots (low density residential) - 800 m^2 ■ 2 new residential lots (low density residential) - 870 m^2 ■ 4 new residential lots (medium density residential) - 900 m^2 ■ 2 new residential lots (medium density residential) - 1,000 m^2 ■ 2 new residential lots (medium density residential) - 1,100 m^2 ■ 3 new residential lots (medium density residential) - 2,000 m^2 *Costs exclude construction.*	$10,500,000
New industrial lots	60 lots *Cost include design and construction*	$11,500,000
Power	Relocate the power station	$20,000,000
	Expansion of rooftop solar - 50 houses	$550,000
Water	Raw water supply - reliability study	$200,000
	Raw water supply - upgrade	$5,000,000
	Existing treatment system - upgrade	$1,500,000
	Demand management program - Education program and water efficient devices	$300,000
Sewerage	Additional treatment train	$2,000,000
General upgrades	Splash park	$1,500,000
	Visitor Information Centre	$3,000,000
	Jetty improvements	$1,000,000
	Relocation council chambers	$3,000,000
	Signage improvements & beautification works	$500,000
Airport upgrade costs	Relocation of existing runway	$15 - 25,000,000

We note that Aurecon has no control over the cost of labour, materials, equipment or services furnished by others, or over Contractors' methods of determining prices, or over competitive bidding or market conditions. Any opinion or estimate of costs by Aurecon is to be made on the basis of Aurecon's experience and qualifications and represents Aurecon's judgement as an experienced and qualified professional engineer, familiar with the construction industry. Aurecon cannot and does not however, guarantee that proposals, bids or actual construction costs will not vary from Aurecon's estimates.

MORNINGTON SHIRE COUNCIL

CORPORATE PLAN

2018-2023

MORNINGTON SHIRE COUNCIL

Our Vision

To empower our Community – Our people

To feel solid and strong like the rock in Mundalbe

To taste and hear the breaking waves of change

To establish clean, safe, healthy lifestyles togetherness

Pride and respect for each other in our culture, achievements and successes

To see and smell the compassion and peacefulness of our community

Our Mission

By 2023 Mornington will be a Community where:

- Our people are happy, healthy and safe
- Our natural environment is valued and well-managed
- Our culture is retained and maintained
- We have quality infrastructure
- We have a sustainable local economy
- Governance and ownership of Community direction is by Council
- We have transparency of government and open communication between the three tiers of Government

Our Goals

Our goals are to make the Wellesley Islands the best place they can be by

- Enhancing community well-being
- Keeping our Culture alive
- Creating opportunities for prosperity
- Protecting our country
- Enhancing and supporting local business

Council's Values

- Responsibilities
- Respect
- Compassion
- Hard work
- Working together
- Proud to belong

Foreword

This Corporate Plan focuses on Council's obligations, roles and responsibilities in the development of a vibrant, self-sustaining, progressive Local Government. Two of the critical factors for Council to consider in developing our Corporate Plan are the acknowledgment that the Council has limited resources and limited opportunity to raise own source revenue. Additionally with no rate base and heavy reliance on grant funding, coupled with community expectations, Council's services must be both affordable and fit for purpose.

Councillors play a strategic role, rather than an operational one in the development of this Corporate Plan and as such, whilst there is still scope for focus on the immediate needs of residents, Council recognises a higher obligation, which is to the whole of our Community and to the future of the entire Mornington Shire Council.

This Corporate Plan provides a framework for Council to plan, go about its business and deliver services for the next five years and to set the scene for life beyond that. In developing this Corporate Plan, Council has considered and identified the following priorities:

Improving Community Lifestyle

- Council will ensure quality infrastructure is developed and managed effectively and efficiently to provide safe and suitable facilities for our residents,
- Council will continually develop its open spaces, streetscapes and general appearance to provide safe recreational opportunities for community members, and
- Council will develop a quality road network, transport hubs and street scapes that meet current and long-term needs and expectations of community.
- Effective Asset Management of Council Facilities (e.g. playgrounds)
- The provision of a range of healthy lifestyle recreation opportunities for residents.
- Community Capacity Building
- Accessibility
- Quality of Life/Burden of Disease
- The lifestyle of young people in the community and the need to promote their involvement in community life

Keeping our Culture Alive

- Council will actively promote Mornington Shire as an inclusive and vibrant community where traditional culture is valued and maintained.
- Council will develop and maintain services that promote and support indigenous cultural identity and beliefs.
- Community Involvement and Participation
- Sustainable funding

Creating Opportunity for Prosperity

- Council will nurture business opportunities that create sustainable local employment and stimulate economic development and investment, and
- Council, as a procurer of goods and services, will wherever possible support the businesses in our Shire.
- Prepare and implement an Economic development Strategy that emphasises private sector development
- Ensure that community and stakeholders participate in economic planning exercises coordinator by Council through regular consultation and engagement
- Facilitate training, accreditation and development opportunities

Protecting our Country

- Council will develop innovative and cost-effective strategies to provide an adequate supply of potable water that meets World Health Standards and community expectations, and
- Council will continue to develop and implement strategies that provide environmental sustainability and meet statutory and regulatory requirements.
- Implementation of an Environmental Management plan, addressing Waste Management, Native Vegetation Management Water Management, Open Spaces and Parks Management and Weed Management
- Council will continue to promote town appearances by implementing a Landscape Master Plan, increase maintenance service levels and promote community participation
- Implementation of a Traffic Management Plan and Strategic Road Safety strategy
- Continue to update and review the Assets Management Plan and identify works as required.

Enhance and Support Council Business

- Council will use all avenues to promote its priority areas and to advocate on behalf of the Community
- Promote positive behaviour culture through constructive behaviour
- Council will promote successes and achievements through media
- Commitment to a long-term view and long-term budget (Long Term Financial Plan – LTFP)

Governance and Communications

- Council will have greater transparency and open communication between the three tiers of government
- Council will use all avenues to make relevant information available to stakeholders
- Council will identify responsibility for the provision of services with the Community and
- Council will meet all requirements to be compliant
- Council will promote the highest standards of corporate governance focussing on accountability, transparency and performance, and
- Council will ensure that it continuously advocates on behalf of the Community and makes all levels of Government accountable for the commitments they have given to work together and Close the Gap.

Meet our Elected Members

Mayor Kyle Yanner

Deputy Mayor Dwayne Rogers

Councillor Bob Thompson

Councillor Roxanne Thomas

Councillor David Barnes

Meet our Executive Team

Lyndon Prior

Acting Chief Executive Officer

Owen Jensen

Acting Executive Manager of Finance and Human Services

David Torr

Acting Executive Manager of Technical Services

Program 1 – Improving Community Lifestyle

Goal

Mornington Shire Council will provide leadership in facilitating the development and maintenance of diverse, liveable and sustainable communities and develop responses addressing community needs and aspirations in this area.

Services under this Program	Critical Success Factors
Environmental Health Animal Control Housing Sport and Recreation Communication Accommodation	Effective collaboration with Australian and Queensland Governments and their agencies Effective utilisation of Council assets Effective budget management Matching service levels to priority areas Effective advocacy Effective recruitment and training of local staff

Issues identified and strategies to address them

PRIORITY	OUTCOME	STATEGIC ACTION
Effective Asset Management of Council Facilities (e.g. playgrounds)	Conduct works as outlined in Council's Asset Management Plan to maximise useful life of managed and owned facilities	Council Plan updated annually by June 30th Works identified conducted and recorded as required
The provision of a range of healthy lifestyle recreation opportunities for residents	Implementation of Council's Recreation Strategy in conjunction with all stakeholders Maintain Council assets to provide Oval re-development	Strategy complete and implemented- reviewed annually Ongoing maintenance of Council's Oval
Community Capacity Building	Council takes a lead role with stakeholders in the development of a Strategic Plan for service delivery	Strategic Plan implemented for service delivery for Mornington Island
Accessibility	Obtain funding for a Disability Needs Review Conduct a Disability Needs Review in conjunction with Mornington Island Health Council	Funding obtained and scope of works competed Review completed and reviewed annually
Quality of Life/ Burden of Disease	Prepare a Public Health Strategy	Mornington Island Health Council to action in conjunction with Council

The lifestyle of young people in community and the need to promote their involvement in community life	Explore opportunities for greater employment of youth in Council Be actively involved in major community projects that involve the well-being of young people Advocate on behalf of young people and where appropriate, assist young people themselves in advocating on issues that affect their wellbeing. Maintain regular liaison with Mirndiyan Gununa Aboriginal Corporation, the PCYC and School and all other stakeholders.	Identify opportunities for funding to be included as part of the annual budget process. Maintain effective links to the Community through the Sport and Recreational Community Strategy Demonstrate effective relationships with service providers and Government. Report to Council at least quarterly.

Program 2 – Keeping our Culture alive

Goal

The Community will have access to a diverse range of cultural and lifestyle experiences. The Council will develop and promote these experiences for the benefit of all residents.

Services under this Program	Critical Success Factors
Community Cultural Centre – Mirndiyan Gununa Aboriginal Corporation	Effective relationship with Board of Management and staff
Festivals and Events – celebrates aspects of our community and its lifestyle	Community Support and Participation Demonstrating the importance of culture Capacity to sustain and develop infrastructure Effective relationship with all stakeholders

Issues identified and Strategies to address them

PRIORITIES	OUTCOMES	STATEGIC ACTIONS
Community Involvement and Participation	Promotion of all services available to the community, including those provided by non-government agencies. Ensure services are accessible to all of the community.	Work with all stakeholders Work with all stakeholders
Sustainable funding	Collaborate with all stakeholders to secure sustainable funding for cultural programs and services.	Council endorse appropriate applications for funding and identifies and secures appropriate funding for development of Council run programs and services

Program 3 – Creating Opportunities for Prosperity

Goal

Mornington Shire Council will promote sustainable economic development for the benefit of the whole community.

Services under this Program	Critical Success Factors
Business Development	Co-operation of private sector and stakeholder partners (ADBT, Department of Prime Minister and Cabinet, IBA, MIACSED)
Motel/Bakery/Batching Plant/ Building Services	Council commitment and resources invested into increasing employment in a sustainable manner Community support for economic development vision

Issues identified and Strategies to address them

PRIORITIES	OUTCOMES	STATEGIC ACTIONS
Facilitating economic development activities and opportunities.	Implement an Economic Development Strategy that emphasises private sector development	Strategy implemented and reviewed annually
Community participation	Ensure stakeholders participate in economic planning activities coordinated by Council through regular consultation and engagement	Support the work of ADBT, IBA, MICSED and other entities on the Island
Support to existing business.	Facilitate training, accreditation and development opportunities for existing businesses.	Support the work of ADBT
Support for regional economic development	Support ADBT's efforts to generate private economic development	Councillors and/or officers to attend meetings of ADBT

Program 4 – Protecting our Country

Goals

Mornington Shire Council will

- have facilities, assets and services which maximise useability, efficiency and sustainability and fosters civic pride;
- protect the bio-diversity within the region and will develop a sustainable environment for this generation and the future:
- ensure that the built environment meets basic standards of quality in design and construction;
- Ensure that the new Planning Scheme meets the long-term needs of the Community and is effectively implemented.

Services under this Program	Critical Success Factors
Asset Management Co-ordination Technical Services Council Building Maintenance Environmental Management Fire Prevention Parks and Gardens Roads Maintenance Planning and Design Waste collection, disposal and management Water collection, storage and management	Seek alignment between community expectations and available resources in service delivery Management plans and best practice manuals are developed and implemented Policies and strategies are documented, relevant and integrated Effective communication and consultation with internal and external business units Identify sustainable funding opportunities

Issues identified under this Program and strategies to address them

PRIORITY	OUTCOME	STATEGIC ACTTION
Environment Behaviour of litterers / civic pride/responsibility Loss of vegetation Water quality & flood management Waste management Trees in public places Weeds	Implementation of the Environmental Management Plan, addressing Waste Management, Native Vegetation Management, Water Management, Open Space and Parks Management, Tree Management and Weed Management Carry out identified works and maintenance to meet Environment Management Plan as identified in line with budget allocation.	Plan implemented and reviewed annually Collaborate with GRAC to address issues outside of the Township in an ongoing basis Review of Environment Management Plan annually to identify works required
Town Appearance Community expectations Existing service levels Apathy/Lack of civic pride	Implementation of the Landscape Master Plan Increase maintenance service levels to Gununa's streets and open space areas Continue to promote community participation in the maintenance of the streets and open space areas	Plan implemented and reviewed annually Community satisfaction survey

	Carry out identified works and maintenance to meet Environmental Management Plan as identified in line with budget allocations	
Roads and Traffic Perceptions & expectations of level of traffic volumes, reason for traffic plans (includes parking)	Implement a Traffic Management and Strategic Road Strategy Develop a Road Safety Strategy	Complete and implemented
Aerodrome and Jetty Maintain assets	Prepare asset management plan for the aerodrome and jetty	Completed
Asset management Asset Management Plan	Update and develop a new Asset Management plan and carry out works as identified	Plan Completed Works complete as identified

Program 5 – Enhance and Support Council Business

Goal

The Mornington Shire Council will manage its business efficiently and effectively with its available resources.

Services under this Program	Critical Success Factors
Customer Service Executive Management Financial Management Information Technology Payroll Human Resources Advocacy Grant Funding Governance Communication	Utilisation of Council assets by the Community Effective advocacy A sustainable positive organisation culture Attraction and retention of qualified and skilled staff

Issues identified and Strategies to address them

PRIORITY	OUTCOME	STRATEGIC ACTION
Governance	Council will use all avenues to promote its issues and to advocate on behalf of the Community. Identify responsibility for the provision of services within Council and between levels of government and local service providers Advocate and lobby for agreements to deliver services	Attendance at LGAQ, State and Federal conferences and meetings; regular meetings with politicians
Human Resources	Support training Promote a positive culture through constructive behaviour	Maintain regular training courses. Conduct regular training on ethics, code of conduct and positive workplace relations
Ensuring Community's respect for Council	Promote successes and achievements through media	Publish regular updates on website and in other publications
Financial sustainability	Commitment to a long-term view and long-term budget (Long Term Financial Plan – LTFP)	Update every year

Program 6 – Governance and Communictions

Goal

Mornington Island will have greater transparency and open communication between the three tiers of government
.

Services under this Program	Critical Success Factors
Council Meetings Service Provider Meetings State and Commonwealth consultation Customer Service Media relations and Social marketing	Public access to information Regular interaction between Council and Stakeholders Effective advocacy A sustainable positive organisation culture Up to date social networking sites Respect for Council role in Community

Issues identified and Strategies to address them

PRIORITY	OUTCOME	STRATEGIC ACTION
Public access to information	Council will use all avenues to make relevant information available to stakeholders	Maintaining social media through website and Facebook pages Use Community Noticeboards and networks to publish information Local Newspaper
Transparent Governance	Compliance with requirements of legislation Identify responsibility for the provision of services within Community and ensure communication between levels of government and local service providers Ongoing communication between Council and stakeholders	Maintaining registers required by legislation Regular meetings of stakeholders Attendance at meetings by key stakeholders Presentation of progress reports to Council by stakeholders

Ensuring Community's respect for Council	Promote successes and achievements	Publish regular updates on website and in other publications

Department of Environment and Heritage Protection

UNDERSTAND | ADAPT | TRANSITION

Pathways to a clean growth economy

Queensland Climate Transition Strategy

Climate Change

Queensland Government

Minister's foreword

Queenslanders want action on climate change.

In an overwhelming response to our discussion paper Advancing Climate Action in Queensland: Making the transition to a low carbon future, Queenslanders told us that action on climate change is needed now to create new jobs and sustainable communities in Queensland. From tourism operators on the Great Barrier Reef, who witnessed the worst coral bleaching event ever seen, to resource communities keen to ensure the long term viability of jobs, to business looking for the markets of the future, to Indigenous communities who see the opportunity for home-grown, carbon-exporting industries: all want a strong economy and a healthy environment for our kids to enjoy.

Stronger national action remains the most effective and least-cost way to reduce Australia's—and Queensland's—carbon pollution. The Palaszczuk Government will continue to advocate for clear and credible national climate and energy policy settings that will cap and drive down carbon pollution, in accordance with our international obligations.

But we are also acting now to ensure our communities and workforce are ready to capitalise on the opportunities of the global transition, and that we are putting in place the right measures to attract the new investment and industries of the clean growth economy.

The International Renewable Energy Agency, along with International Energy Agency, estimate the global compact to keep global warming to well below 2 degrees Celsius will add $19 trillion to the world economy and create 6 million new jobs.

We will create our fair share of these jobs of the future here in Queensland.

In this Climate Transition Strategy we set out how we will set Queensland on the pathway to transition to a clean growth economy.

The first step is to set a goal, and that is for Queensland to achieve zero net emissions by 2050.

We will also:

- Generate 50% of Queensland's energy from renewable sources by 2030.
- Continue to advocate for national policies that will reduce carbon pollution.
- Lead by example by working to reduce the carbon pollution created by government operations and buildings.
- Take actions that will help create the jobs of the future in Queensland.
- Support businesses and households to increase their sustainability and decrease their expenses.

Queensland is already experiencing the impacts of a changing climate. Alongside this transition strategy is the Queensland Climate Adaptation Strategy 'Pathways to a climate resilient Queensland' which sets our our approach to protecting the people and places we love and Queensland's way of life.

Steven Miles MP
Minister for Environment and Heritage Protection and
Minister for National Parks and the Great Barrier Reef

Contents

Executive summary

The Queensland Government has set a state target to reach zero net emissions by 2050. Along with the interim target for at least a 30% reduction in emissions on 2005 levels by 2030, this target is a critical first step to drive the investment and action needed to transition Queensland's economy to a zero emissions future.

This Queensland Climate Transition Strategy outlines how Queensland proposes to prepare for this transition and set itself on the pathway to meet this target. The world is heading toward zero net emissions and the technologies enabling this transition are now competitive. Australia's ratification of the Paris Agreement means the nation will need to reach zero net emissions by 2050.

As Australia's highest emitting state, this will challenge Queensland. Yet Queensland is well positioned to capitalise on its strengths: its skilled workforce; its capacity to act as a major carbon sink; its strong innovation and research sector; and its strong communities. Many decarbonisation actions also produce co-benefits in areas such as health, amenity and the environment.

It is in Queensland's interests to position itself to respond to the economic transition taking place as a result of the world's need to address climate change. But that response must be at the right pace for Queensland, be supported by solid evidence, and be developed collaboratively with Queenslanders across the state. The transition is both technically and practically achievable and as Queensland will be particularly affected by the impacts of climate change, there is a lot to gain from undertaking actions to address it.

The Queensland Government is already using the state's competitive advantages to create the jobs of the new economy and build a solid platform for reaching the 2050 target. Early actions include the ground-breaking 50% renewable energy target by 2030, the Advance Queensland initiative—including the Biofutures 10-Year Roadmap—and a commitment to developing an Electric Vehicle Strategy to prepare Queensland for a transition to electric vehicles.

This Strategy proposes a two-stage approach to developing Queensland's long-term policy framework to reach the 2050 target. The first stage and associated policy approaches will be implemented over the next three years, noting that this period of time is likely to be characterised by policy uncertainty and instability at the national level.

Strong national action to cap and reduce carbon pollution will deliver the best outcomes for Queensland; however, there are many low risk 'no-regrets' actions that Queensland can take to position the state for a smoother transition as the global economy accelerates towards zero net emissions. These actions include de-carbonising our energy sector (and biggest emitting sector), developing our capacity as a carbon sink, developing our capacity to drive innovation at a community level through place-based initiatives, and for government to drive zero net emissions targets through its own activities.

This will position Queensland for the second stage, which is the deployment of a suite of substantive policy measures from 2020, representing the state's pathway to zero net emissions by 2050. These policy measures will be based on a significant body of work that will help Queensland to position itself against global trends.

Our commitment

Our vision is an innovative and resilient Queensland that addresses the risks and harnesses the opportunities of a changing climate.

We will make the transition to a low carbon, clean growth economy in a way that secures new jobs and opportunities for Queenslanders, supports and strengthens our communities and protects our precious natural environment.

Queensland Government's three key climate commitments

1. **POWERING QUEENSLAND WITH 50% RENEWABLE ENERGY BY 2030**
2. **DOING OUR FAIR SHARE IN THE GLOBAL EFFORT TO ARREST DAMAGING CLIMATE CHANGE BY ACHIEVING ZERO NET EMISSIONS BY 2050**
3. **DEMONSTRATING OUR COMMITMENT TO REDUCING CARBON POLLUTION BY SETTING AN INTERIM EMISSIONS REDUCTION TARGET OF AT LEAST 30% BELOW 2005 LEVELS BY 2030**

What do we mean by 'transition'?

The global economy is changing and Queensland is substantially influenced by these global trends. The jobs of today will not be the jobs of tomorrow.

'Transition' refers to shifts in the Queensland economy in response to the way the global economy is changing, and will continue to change, in response to an increasingly carbon constrained environment—from global trends such as automation, electrification, disruptive technologies, and information and communications technologies (ICT) innovation. These trends will be compounded by international and national measures to address climate change, as well as Queensland's commitment to action, which will drive structural economic change that will affect many of the state's industries.

A 2050 zero net emissions target for Queensland

Zero 'net' emissions means that carbon pollution may still be produced in one part of the economy (e.g. some industrial processes) and count towards our pollution profile. However, the Queensland Government will be looking to find ways to offset that pollution in another part of the economy, such as increasing carbon storage in the landscape.

Queensland joins Victoria, New South Wales, South Australia, Tasmania and the Australian Capital Territory in setting a **zero net emissions by 2050 target**.

A long-term, state-based target provides a strong signal for guiding policy and driving the investment needed to put Queensland on a pathway to a zero net emissions economy.

Queensland's 2050 zero net emissions target is a clear long-term goal which will:

- Protect the state's long-term interests by positioning the economy to be competitive in a world where carbon pollution is constrained
- Provide the Government with the policy direction to manage uncertainty by equitably allocating costs of transition and reducing the risk of stranded assets and economic shock in later years
- Provide a signal to industry and the community that can unlock opportunities for investment and innovation in the state
- Demonstrate that Queensland is doing its fair share in the global effort for a zero emissions world.

Queensland's target will guide the Government's pollution reduction policies, inform business expectations about the future, and provide context for community action. In doing so, Queensland's target will play an important role in linking decisions with longer-term timeframes that need to be made now and, ultimately, national and global climate objectives. The target will also help maintain Queensland's commitment and allow our progress to be monitored and evaluated.

Queensland has also set an **interim target of at least a 30% reduction in greenhouse gas emissions by 2030, contingent on continued national and global action to meet the goals of the Paris Agreement**. The purpose of this target is to guide Queensland policy makers and industry in their medium-term planning and investment, while providing a clear signpost for monitoring progress towards the 2050 target.

The journey so far

May 2016

- Released the *Advancing Climate Action in Queensland: Making the transition to a low carbon future* discussion paper, inviting Queenslanders to have a say on the directions and opportunities that should be pursued to build a cleaner, more sustainable and prosperous Queensland. The discussion paper received nearly 6000 responses from Queenslanders across the state.
- Released the *Carbon Pollution Projections: Queensland's Baseline Greenhouse Gas Emissions to 2030*. The case for action on climate change was set out in these documents.

October 2016

- Released the *Queensland Climate Adaptation Directions Statement* and *Regional Climate Change Projections*. Consultation was held across the state on these documents and almost 300 submissions were received.
- Held the *Advancing Queensland: Building the new low carbon economy* industry summit where leading business representatives from across Australia gave their views on the opportunities for Queensland in a zero net emissions world.

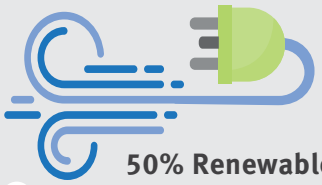
2017

- Release of *Queensland Climate Transition Strategy* and the *Queensland Climate Adaptation Strategy*—together they will form the Queensland Government's response to climate change.

EARLY MEASURES TO REVITALISE CLIMATE CHANGE ACTION IN QUEENSLAND

Queensland Carbon Plus Fund

$8.4 million will support the carbon farming industry and create jobs for Traditional Owners to deliver environmental, social and cultural benefits in Indigenous communities.



50% Renewable energy target by 2030

1 million or 3000MW solar rooftops

Green Bonds

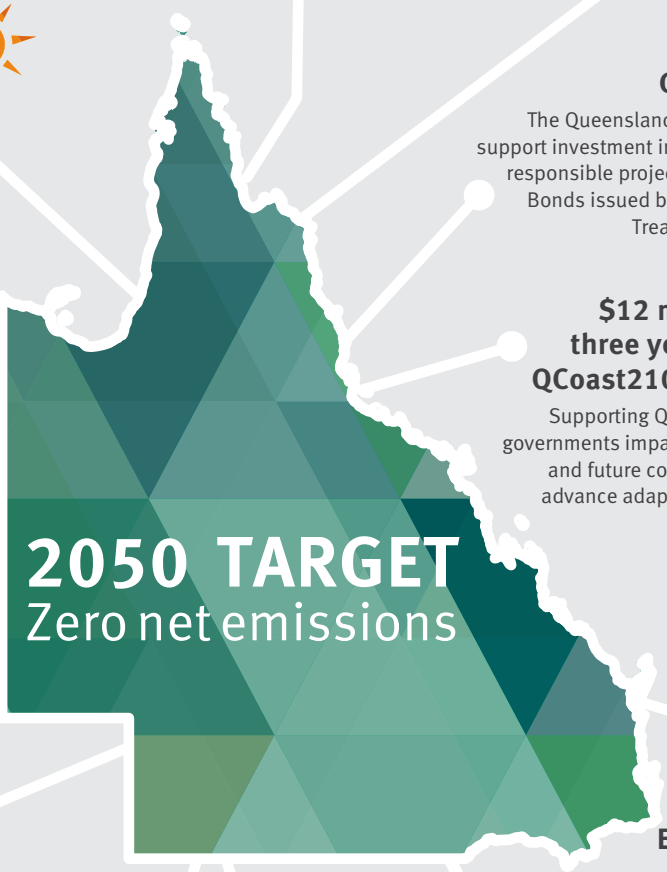
The Queensland Government will support investment in environmentally responsible projects through Green Bonds issued by the Queensland Treasury Corporation.

$12 million over three years for the QCoast2100 program

Supporting Queensland local governments impacted by existing and future coastal hazards to advance adaptation planning.

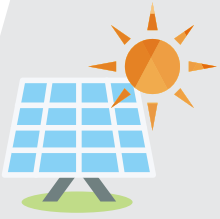
Advance Queensland Biofutures 10-Year Roadmap and Action Plan

The Government has set a vision for a **$1 billion** sustainable and export-oriented industrial biotechnology and bioproducts sector.



Electric Vehicle Strategy

The **Queensland Government's Electric Vehicle Strategy** will prepare Queensland for a transition to EVs.



Solar150

Providing long-term income certainty to support the development of up to **150 megawatts** of large-scale solar power generation in Queensland.

$3 million Climate Adaptation Strategy

The Government has developed a **Queensland Climate Adaptation Strategy** to improve opportunities and reduce risks to our communities, economy, infrastructure and environment from current and future climate impacts.

Queensland Building Plan Discussion Paper

Building on early commitments to **improve the sustainability of privately owned buildings and homes** and work towards achieving **Green Star ratings for government buildings**.

Sustainability assessments for all government capital projects over $100M

As part of the **State Infrastructure Plan**, all state government projects of **greater than $100 million** in value will undertake a sustainability assessment, including climate change considerations.

Global drivers

The 2015 United Nations Paris Agreement was a landmark commitment by more than 190 nations, including Australia, to limit global warming to "well below" 2 degrees Celsius, above pre-industrial levels and as close to 1.5 degrees as possible. It committed the world's governments, including Australia's key trading partners, to zero net emissions by the second half of this century.

Since Paris, a major shift in global investment towards zero emissions sources of energy has accelerated with the International Energy Agency highlighting that global investment in renewable energy and energy efficiency now tops $US0.5 trillion.

The groundswell of climate action from sub-national governments, cities and businesses has also increased after Paris. More than 170 states and regions in 33 countries representing over 1 billion people support the goal of zero net emissions by 2050 as part of the Under2 Coalition.

KEY POINTS

- The world is committed to the Paris Agreement.
- Zero emissions technology is now cost-competitive.
- The global economy is already transforming.

National drivers

Australia needs to do its part as a nation to meet the commitments made in the Paris Agreement.

Strong, coherent and consistent policy drivers in response to climate change are needed at a national level to reduce emissions at the lowest cost across the Australian economy and to support Queensland's—and all state and territories'—efforts to transition to a zero net emissions economy.

Queensland will continue to advocate for effective and responsible national policy settings through the Australian Government's National Climate Change Policy Review in 2017 in collaboration with other states and territories.

Other states and territories are active in developing assertive climate change policies and actions with a number adopting zero net emissions targets.

Industry continues to advocate for stronger policy measures and, in many cases, is ahead of government in the action they are taking in response to the global transition. Industry has been clear in their conversations with the Queensland Government that certainty in climate change policy is critical to their ongoing success.

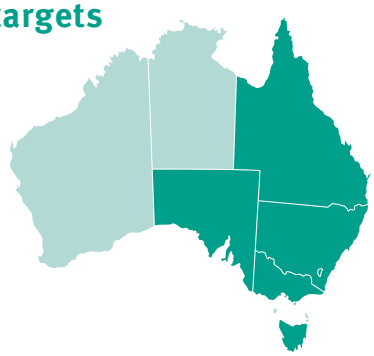
But Queensland can't wait for the national policy position to become clear and do nothing in the meantime. There are actions that the Queensland Government must take to prepare the state for the inevitable transition that it will have to make. By getting on the right path now, Queensland can get ahead to ensure the state is not disadvantaged in the long run and that the pathway to a zero net emissions future plays to its strengths.

Queensland will continue work on climate change action within its own borders and will seek opportunities to collaborate across state boundaries. Queensland joins Victoria, New South Wales, South Australia, Tasmania and the Australian Capital Territory in having set a zero net emissions by 2050 target. In the absence of policy leadership at the national level, the states will continue to work together through the Climate Action Roundtable to find ways to collaborate to achieve the 2050 target.

KEY POINTS

- Strong, effective climate change action at a national level is needed.
- Business, industry and the community are already working to manage their transition.
- States and territories will continue to work together on climate change.

States and territories with zero net targets

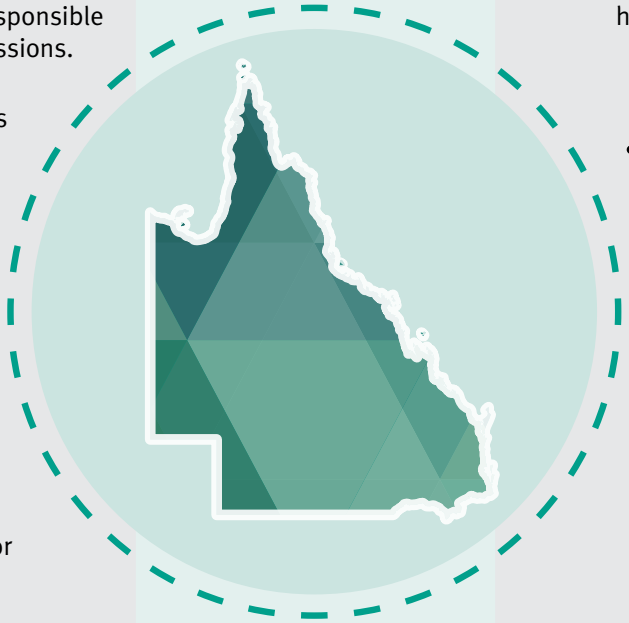


Make climate change policy a prominent agenda item at COAG meetings so that the information regarding each State's carbon reduction contribution is reported and evaluated.

QUEENSLAND DRIVERS

RISKS

- Queensland is Australia's highest emitting jurisdiction–responsible for 28% of national emissions.
- Queensland contributes around 0.3% of global emissions.
- ClimateWorks Australia modelling indicates a 31% increase in emissions to 2050 under business-as-usual.
- Emissions from land clearing continue to be a significant issue for Queensland.
- Queensland's high coastal population increases our vulnerability to sea level rise.
- Communities are vulnerable to more heatwaves and more intense rainfall events in some regions and droughts in others.
- The Great Barrier Reef is already being impacted by climate change, placing at risk the $6 billion and 69,000 jobs it contributes to our economy.



ADVANTAGES

- Queensland's large land mass has the potential to produce biofuels and develop a carbon farming industry.
- The agricultural sector is adaptive and responsive to climate change, ensuring its future competitiveness.
- The strong industrial sector produces many products that will be needed in the future economy and we have many mineral resources that will also be required.
- The long coastline and pristine environments provide opportunities in low carbon tourism.
- Research institutions across the state are already collaborating with industry on low emissions solutions.
- Many communities across Queensland are already responding to climate change.

Getting it right for Queensland

Setting a 2050 zero net emissions target and an interim 2030 target is ambitious, but it is an important first step in responding to global market and climate drivers. It signals to global and domestic business and industry where Queensland needs to be, and it will guide the Government's role in facilitating and enabling industries and communities to transition. Without this, Queensland risks being left behind in the national and global economy.

The Queensland Climate Transition Strategy builds on early action to establish a two-stage process for Queensland to achieve the 2050 target. The Strategy recognises the transition to a zero net emissions economy is both technically possible and economically responsible.

The Strategy recognises Queensland's strengths and natural competitive advantages: a skilled workforce; solar, wind and natural resources; capacity to be a carbon sink; strong innovation and research sector; and strong communities.

Importantly, it sets out the first stage to move the Queensland economy towards the 2050 target.

This first stage, over the next three years, is characterised by the need to keep pace against national uncertainty, and the need to continue to advocate for strong national action which will deliver the best outcomes for Queensland and Australia as a whole.

During this period there are many low risk 'no regrets' actions that Queensland can take to position itself for a smoother transition as the global economy accelerates towards zero net emissions.

These actions include de-carbonising our energy sector (the biggest emitter), and for government to drive zero net emissions targets through its decision making.

Further analysis of economic and international trends—underpinned by ongoing engagement with communities, industry and business—will guide the second stage of pursuing the most appropriate post-2020 pathway for Queensland in the context of national policy settings in place at that time. Progress will be reviewed in 2019 to identify a broader policy framework for Queensland's post-2020 action.

KEY POINTS

- It is in Queensland's interests to transition—and it is both technically possible and economically responsible.
- Queensland needs to keep pace with the transition in the global economy to take advantage of the opportunities and minimise the risks.
- Queensland has a good competitive advantage and a past history of making strong economic transitions.
- A two-stage approach to transition is sensible and will get Queensland on the most cost-effective pathway, but this is not a formula for inaction in the short term.

What Queenslanders said...

In response to *Advancing Climate Action in Queensland: Making the transition to a low carbon future* discussion paper:

- Commit to a target of zero net emissions by 2050.
- Integrate emissions targets across government and in key policy areas including mining, transport, vegetation management, housing, infrastructure, energy and waste.

"Set a clear framework, with binding emissions targets and monitoring based on credible scientific analysis (e.g. The Climate Authority) and Queensland's 'fair share' of emissions reductions."

"The problem we face is bigger than right here and now, and more important than the electoral cycle. There will always be jobs in new and non-polluting industries."

"The State Government's goal of 50% of electricity generation from renewable energy by 2030 is to be applauded."

"Queensland has a great opportunity to reduce our greenhouse pollution. What is needed is for all sectors of the economy to take part. Furthermore, the economic benefits of reducing pollution now will make it easier than delaying action into the future."

Climate change is the critical issue of our time and all levels of Government have a responsibility to act decisively. A failure to restrict average global temperature increases to "well below" the 2 degrees range, as outlined in the 2015 Conferences of Parties (COP21) Paris climate agreement, will result in catastrophic environmental, social and economic impacts.

...commit to targets that ensure less than 1.5 degree rise in temperature.

...emissions are currently an external cost in our economic system and this has got to change.

I would like to see the aim clearly stated as not reaching 1.5 degree according to the Paris Agreement rather than not reaching 2 degrees. Even 1.5 is too high for many ecosystems such as coral reefs.

Setting Queensland on the transition path

The transition to a clean growth economy is a process that has already begun.

A suite of actions has been developed that advance this transition in a way that secures new jobs and opportunities for Queenslanders, supports and strengthens our communities and protects our precious natural environment. These actions are based on extensive feedback received from both industry and the community over the past 12 months.

Our pathways

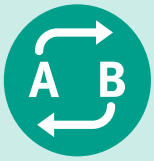
PATHWAY 1

Create an environment for investment shift and innovation

Response 1—Facilitate the zero net emissions industries of the future

Response 2—Lead by example

PATHWAY 2



Facilitate existing Queensland industries to transition

Response 3—Understand the risks and opportunities that a zero net emissions future presents for Queensland

Response 4— Encourage innovation and transition to low and zero carbon technologies

PATHWAY 3

Work with Queensland's regional communities to transition

Response 5—Work with Queensland's regional communities to transition

Response 6—Skill Queenslanders for new economy jobs

Our principles

Focused on opportunity	Flexible	Effective abatement	Cost effective	Maximise co-benefits and manage risks
We will identify and take up the opportunities that a zero net emissions transition provides	We will deliver early action to put Queensland on the path to zero net emissions that will remain complementary to emerging national policy	We will target areas of most emissions reduction potential, avoid emissions lock-in, and use effective mechanisms	We will target areas of: low abatement cost; feasible total cost; and dynamic cost efficiency (lowering long term transition costs through innovation, technology diffusion and investment security)	We will promote transition actions that support the Government's economic diversification and innovation agenda and deliver economic cobenefits such as jobs, industry development and lowered energy costs, and that support other Queensland Government objectives such as climate change resilience, reef water quality, biodiversity and air quality

Most importantly, Queensland will work from the strong platform that has already been developed.

The Queensland Government has already committed to a number of actions that will significantly deliver on reducing emissions, while creating jobs and facilitating the growth of new industries. This solid platform of activity includes:

- Commitment to a 50% renewable energy target by 2030—creating additional investment and jobs, particularly in regional Queensland.
- 1 million Solar Rooftops or 3000 megawatts of solar photovoltaics (PV) by 2020.
- Developing an Electric Vehicle Strategy to prepare Queensland for the transition to electric vehicles.
- Supporting carbon farming in regional and remote Indigenous communities through capacity building, recognising Indigenous benefits, and offsetting government emissions with Aboriginal carbon credits.
- Commitment to improve the sustainability performance of Queensland's commercial, residential and government buildings through the Queensland Building Plan.

The Government will build on this work to continue Queensland's transition.

This work will be supported and informed through ongoing community engagement as well as expert advice provided by the Queensland Climate Advisory Council (QCAC)—which will draw on additional expertise through the Queensland Climate Adaptation Partners group and Queensland's Carbon and Industry Network.

Before 2020, Queensland will also explore what may be required, by way of a legislative response, to assist us in meeting the target commitments we have made. Other jurisdictions have developed Climate Change Acts, and a similar approach for Queensland will be explored.

QUEENSLAND CLIMATE ADVISORY COUNCIL

- The Queensland Climate Advisory Council's (QCAC) purpose is to provide the Queensland Government with expert advice on opportunities and directions to maximise the economic and social potential of the transition to a zero net emission and climate resilient economy.
- The 15 members are eminent business, industry and research leaders who will act as a conduit between the Queensland Government and the private sector to identify priorities for climate change action and innovation.
- The QCAC's first role will be to apply its expertise to enhance the delivery of the Queensland climate transition and adaptation strategies. Following this, the QCAC will participate in the 2019 review of climate transition actions and will identify future policy actions for Queensland Government consideration.

PATHWAY 1

CREATE AN ENVIRONMENT FOR INVESTMENT SHIFT AND INNOVATION

Response 1

Facilitate the zero emissions industries of the future

Action

1.1	Achieve 50% renewable energy generation by 2030
1.2	Develop a Demand Management and Energy Efficiency Strategy
1.3	Deliver the Queensland Electric Vehicle Strategy
1.4	Expand carbon farming in Queensland
1.5	Reduce carbon emissions in the built environment
1.6	Support industry to shift to sustainable biofuels

What Queenslanders said:

- The future should be powered by clean and renewable energy and technology - particularly given we are the 'Sunshine State'.
- We need low-carbon construction, infrastructure and transport systems (e.g. low carbon building design, electric vehicles, biofuels and green star rated buildings).
- Key opportunities are in renewable energy, battery and power storage, cleaner technologies and electric vehicle industries.
- Facilitate carbon farming and offset programs to provide financial incentives to retain forested areas or to revegetate land, including initiatives to diversify land use (carbon farming, organic and small-scale farming, solar and wind farms).
- Provide industry funding and investment to mobilise innovation and action.
- Improve public transport systems to be low-emission, well maintained, affordable, reliable, frequent and integrated.
- Ensure industry emissions are monitored and use penalties or incentives to shape behaviour.

Innovation and investment utilising new technology are essential for the development and expansion of low and zero emissions industries. Growth in low and zero emissions technology industries and enterprises in Queensland presents a major opportunity for business, industry and communities across the state. The government has an important role to play as a facilitator for this investment and innovation.

The Queensland Government is helping local companies, entrepreneurs and startups to bring innovative new renewable technology ideas to the global marketplace. Advance Queensland programs like Ignite Ideas, Innovation Partnerships, the Business Development Fund and the Advancing Regional Innovation Program can help create a new zero emission industry sector in Queensland that will power economic growth and create the knowledge-based jobs of the future.

Platform technologies, in particular, provide a significant opportunity in this space. Platform technologies are used as a base upon which other applications, processes or technologies are developed. The Advance Queensland Platform Technology Program provides opportunities for collaborative partnerships that accelerate the development and deployment of significant industry-based 'game changing' platform technology projects with the potential for multiple industry application.

In addition to the work Queensland has already done to develop a strong platform of high impact, no regrets action, the Government will:

- Develop and implement a Queensland Demand Management and Energy Efficiency Strategy to complement the 50% renewable energy target. The strategy will include a mix of mechanisms tailored to achieving a state-wide energy efficiency goal. To determine an appropriate mix of measures, the Government will explore energy efficiency opportunities in Queensland and the potential to establish an energy efficiency obligation scheme.
- Develop a program to work with Queensland small-medium enterprises to take up energy efficiency measures and other sustainability initiatives that improve climate change mitigation and adaptation.
- Build on the CarbonPlus Fund, established in December 2016, to support landholders undertake carbon farming activities with social, economic and environmental co-benefits. The Government will address regulatory and administrative gaps; support research; engage with landholders on carbon farming opportunities; and investigate opportunities for investment in the revegetation and remediation of land under state control such as abandoned mine sites, unallocated state land, protected areas and forest reserves.
- Develop an action plan to support liquid fuel users switch to sustainable, low carbon biofuels, particularly where electrification may be difficult, such as in the aviation, maritime, freight, mining and agricultural sectors.

CASE STUDY: SOUTHERN AURUKUN SAVANNA BURNING PROJECT

In 2016, the Queensland Government made a significant commitment of $8.4 million to develop carbon farming in Queensland, and in particular to increase the participation and capacity of Aboriginal communities in carbon markets. Through this commitment, we hope to see more projects similar to the Southern Aurukun Savanna Burning Project that aims to reduce greenhouse emissions from fire.

Savanna fires release greenhouse gas emissions. By burning in the early dry season when fires are cooler and patchy, and burning less country, there are fewer emissions.

The Southern Aurukun project combines traditional knowledge of how to read country and knowing when to burn, with modern hardware (e.g. helicopters, fireballs and leaf blowers). The restoration of traditional patchwork burning has significant benefits for the environment.

This project is on Wik and Kugu country, to the south of Aurukun, and is carried out by the rangers at Aak Puul Ngantam in Cape York.

Improved fire management started in 2012, and a fire plan and carbon business plan were developed in 2015 so that the project could be registered under the Australian Government's Emissions Reduction Fund. The rangers have acquired significant knowledge about fire management and the logistics of running a project that can create recognised carbon credits.

In 2015, the project achieved 17,396 tonnes of abatement but the broader social and environmental benefits are what makes this project, and others like it, very exciting.

According to the project coordinators: *"Country is being managed the right way, connection to country is being revitalised and improved corridors are taking pressure off wildlife. Rangers and traditional owners have also gained an understanding of how management of their country is linked to climate change"*.

In the future, there is potential for greater cooperation with neighbours over fire management and a chance to rekindle broader clan networks.

Overall, the project helps fulfil the Wik and Kugu vision of sustaining their values and culture through healthy country and resilient and engaged communities.

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CASE STUDY: GRAZIERS REAPING THE BENEFITS OF CARBON FARMING

With the investment already made by the Queensland Government in carbon farming and our proposal to build Queensland as a significant carbon sink, we hope to drive more projects like the Maranoa Ecosystem Conservation Project #2, outlined below.

Working with local graziers within the Maranoa region, GreenCollar has pioneered a market-based approach that protects threatened forest ecosystems while providing graziers with additional income and increased productive capacity.

One property in particular—located between the Thrushton National Park and the Chesterton Range National Park in South West Queensland—is part of a broader ecosystem corridor being assembled in the Maranoa region. The property, which has been owned by one family for over 100 years, is one of the oldest pastoral properties in its district. The property has a long history of clearing and development for various productive purposes.

In 2016, after consultation with GreenCollar, the family performed a cost-benefit analysis to assess the benefits of managing parts of their property to maximise the carbon stocks and sell carbon credits under the Australian Government's Emissions Reduction Fund. The family concluded that the diversification of their income stream would not only benefit their current sheep grazing enterprise but also enable them to improve the long-term ecological integrity of their property as a whole.

The Maranoa Ecosystem Conservation Project #2 was one of the first 'Avoided Clearing' projects to be implemented in Queensland under the Emissions Reduction Fund and protects over 5,500ha of forest at threat of being cleared.

By protecting and enhancing large tracts of native vegetation and habitat, projects like these aim to maximise the co-benefits to the environment and improve the long-term viability of threatened ecosystems and the services they provide. They also provide graziers and landholders with a diversified income stream across the overall farm enterprise that can potentially increase their resilience to climate risks.

The Maranoa Ecosystem Conservation Project #2 is an example of transition action that can positively benefit landholders and help Queensland move towards a zero net emissions future.

Response 2

Lead by example

Action

2.1	Join the Under2 Coalition and support zero net emissions by 2050
2.2	Demonstrate leadership by reducing emissions from Queensland Government operations
2.3	Integrate zero net emissions goals into state infrastructure planning
2.4	Use the land use planning system to support delivery of zero net emissions
2.5	Develop a Zero Net Emissions Transport Roadmap
2.6	Explore options to regulate greenhouse gas emissions through the Environmental Protection Act framework
2.7	Integrate climate transition risks and opportunities into government decision-making
2.8	Reintroduce comprehensive vegetation management legislation

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What Queenslanders said:

- The Commonwealth Government should lead on climate change policy, but is failing to act.
- The Queensland Government should lobby the Commonwealth Government and act independently where necessary to drive change.
- The Queensland Government needs to lead by example and transition its own operations, for example: low-carbon government operations (buildings, vehicles, electricity and procurement).
- Develop a whole-of-government approach to reduce emissions and integrate low-carbon criteria across policy areas and in investment, infrastructure and innovation funds.
- Local government should be demonstrating action and engaging with communities to facilitate low-carbon initiatives and economies.

The Queensland Government will facilitate transition through policy, projects and procurement, drawing on interstate and international practice. The Government will create platforms for innovation, demonstrate leadership, create demand for new services and set policy direction to drive government and non-government action.

The Queensland Government will sign the Under2 MOU to showcase its commitment to subnational global leadership on climate change and encourage others to do the same. The Under2 Coalition is a diverse group of subnational governments around the world who set ambitious targets (80 to 95% below 1990 levels by 2050) to combat climate change. A total of 167 jurisdictions spanning 33 countries and six continents have signed or endorsed the Under2 MOU—together they represent 1.09 billion people and $25.9 trillion in GDP, equivalent to over a third of the global economy.

To demonstrate government leadership, the Queensland Government will reduce its own emissions from government operations. The first step is to reinstate the requirement for all government departments to report on their emissions from energy and fuel use and air travel by 2018 to manage emissions from government operations.

The second step is to use its funding, policy and purchasing levers to deliver emissions reductions, as well as social and economic outcomes in Queensland.

The Queensland Treasury Corporation is also issuing certified green bonds to investors in environmentally responsible projects funded in part by the Queensland Government.

Queensland has already committed to undertake sustainability assessments (including climate change impacts) for all government capital works projects over $100 million, and will encourage sustainability assessments for projects under $100 million.

The Queensland Government will drive investment in sustainable infrastructure by integrating the zero net emissions goal into the infrastructure policy framework. The land use planning system can be used to help deliver the zero net emissions goal. Building on its commitment to improve the emissions performance of buildings, the Government will ensure that changes to land use and built form—at the state, regional and local level—reduce energy emissions, promote energy efficiency, support renewable technologies and protect natural assets which act as carbon sinks.

The Government will develop a zero net emissions transport roadmap. This will consider better integration of transport policy with land use planning to reduce travel demand and optimise public and active transport infrastructure and services. It will also look at ways to reduce emissions from private, passenger and freight transport, such as through improved vehicle and fuel efficiency, technology and innovation, and fuel shift.

Queensland will continue to advocate for a coherent national framework that addresses greenhouse gas emissions from industry on a nationally-consistent basis. Should no coherent national framework be developed by 2020, Queensland will pursue avenues under the Environmental Protection Act framework to regulate greenhouse gas pollutants.

Queensland also assured the international community that it remains committed to reinstating strong tree-clearing protection laws in the future.

Finally, the government will work to better understand the risks and opportunities that global climate drivers present for its own assets, and investments, and use this understanding to make better decisions.

> *Set an example for others to follow, employing best practice from cities around the world whose climate change response is more advanced.*

> *The Government should legislate a Queensland Climate Change Act, locking in the more ambitious targets, with an agreed upon charter providing principles and objectives that must be considered in plans, policies, programs and operational decision making across departments.*

GREEN BONDS FOR QUEENSLAND

The Queensland Government will support investment in environmentally responsible projects through Green Bonds issued by the Queensland Treasury Corporation (QTC).

QTC has worked with the international Climate Bonds Initiative to independently certify a list of Queensland projects that meet a set of environmental criteria and for which QTC can issue green bonds to domestic and international investors.

The list of potentially eligible projects include:

- renewable energy
- energy efficient processes and products
- low-carbon transport—electrified rail infrastructure and cycleways
- drought resilience and flood defence
- water and wastewater treatment plants and distribution infrastructure
- preservation of the Great Barrier Reef and other natural ecosystems
- low-carbon buildings
- other projects covered by new or revised climate bond sector-specific standards.

The issuance of QTC Green Bonds will support the Government's commitment to the environment and action on climate change and will mean Queensland joins an ever-growing worldwide movement in supporting greater investment in projects that create jobs and support the transition to a zero emissions and climate-resilient economy.

The green bond market has grown rapidly in recent years and is expected to continue to grow as new issuers enter the market and investor mandates for green investments increase.

PATHWAY 2

FACILITATE EXISTING QUEENSLAND INDUSTRIES TO TRANSITION

Response 3

Understand the risks and opportunities that a zero net emissions future presents for Queensland

Action

3.1	Identify the sectoral and regional risks and opportunities for Queensland of transitioning to a zero net emissions economy
3.2	Assess zero net emissions pathways for Queensland, including achieving the interim 2030 target
3.3	Undertake strategic workforce and industry foresight analysis
3.4	Work with industry to promote efficient and effective abatement of fugitive emissions

GLOBAL TRENDS DRIVING CHANGE IN OUR INDUSTRIES

Queensland's economy is fully integrated with global markets. Changes in those global markets will impact on our domestic industries and businesses, especially the products and services we export.

Some key trends that will impact Queensland's economy include:

- **Global demand for carbon offsets:** Post-2020, the global market for carbon credits is expected to grow significantly driven by national commitments to reduce emissions under the Paris Agreement—as well as major international sectors such as aviation and shipping with carbon reduction commitments. Queensland is well positioned to be a major supplier of products and services into this market through carbon farming of our land.
- **Low carbon food and fibre:** Queensland's agriculture sector is already highly efficient but markets are shifting towards suppliers that can provide products guaranteed to be environmentally and socially sustainable. For example, in 2013 the Coca-Cola Company committed to sustainably source 100% of its priority ingredients—like sugar, pulp and paper fibre, and citrus fruit—by 2020.
- **Innovation driven by carbon and resource constraints:** Climate change, natural resource constraints, and the transition to greener economies will drive demand for innovation—and global markets are already changing. Queensland has an opportunity to participate right now.

The global transition to a zero emissions future has significant implications for emissions-intensive, resource-based economies such as Queensland's. Even if Australia and Queensland were to take no further action on climate change, the economy would be affected by the mitigation efforts of other countries and by changing global technology and economic trends.

The transition to a zero emissions economy will take place over decades and will translate into different rates of change for different industries, regions and communities. To transition successfully to a zero net emission future, multiple pathways and options need to be explored. For some sectors, the change may involve use of new fuel sources or greater use of energy efficiency. For others, it may involve a more significant transition to new opportunities.

The Queensland economy is always evolving as conditions and technologies change. The Queensland Government proposes to work with industry to maintain the competitiveness of key Queensland industries and make the transition to a zero net emissions economy as smooth as possible for Queensland businesses and communities.

What can we do to understand impacts on our existing industries and communities?

Over the next two years, the Queensland Government will work to identify the risks, opportunities and costs of transitioning to a zero emissions economy. This will take into account various transition scenarios and external factors such as international action and global trends, as well as the direction of national climate policy, and assess the implications for the Queensland economy. The risks and opportunities will also be analysed on a regional basis, to better understand how different communities will be affected by the transition.

This information will be communicated in regional impact statements and industry impact statements and will be used to:

- Enable a clearer understanding of the trade-offs that may be needed in the economy and 'least cost abatement' options of reducing pollution
- Allow the Queensland Government to facilitate a dialogue with industry to ensure that existing industries remain competitive
- Inform Queensland Government advocacy at a national level and prepare Queensland to respond to national policy settings as they develop
- Assist those communities that will be most impacted by transition scenarios to understand the decisions they need to make and the opportunities and transition pathways available to them
- Allow the Queensland Government to collaborate with industry and communities to facilitate workforce transition where required
- Inform Queensland Government and local government decision making, planning and policy development for longer term post-2020 policy
- Facilitate a dialogue with the community to engage in the most appropriate solutions for communities to transition.

This analysis will allow the Queensland Government to collaborate with local government, industry and communities to identify what response is required to identified risks and opportunities and to facilitate workforce transition where required.

Using the results of this analysis, the Government will reassess the Queensland Climate Transition Strategy in 2019 and develop a suite of longer term policies to put Queensland on a pathway to zero net emissions by 2050.

In conjunction with this pathway and modelling work, the Queensland Government will monitor and evaluate the effectiveness of our policies and actions already underway to ensure they are effective in meeting the state's target.

While further work is needed to create a long term transition pathway that is right for Queensland, this is not a reason for inaction in the short term. There are many actions that Queensland can take to position the state for a smoother transition as the global economy accelerates towards zero net emissions.

Response 4

Encourage innovation and transition to low and zero carbon technologies

Action

4.1	Engage with the start-up community to promote Zero Emissions Innovation In Action
4.2	Partner with Climate-KIC to harness climate change innovation
4.3	Support the 2017 Global Business Challenge to find innovative renewable energy solutions

What Queenslanders said:

- There are economic opportunities and jobs in new clean industries.
- Explore and promote the potential for exporting technologies, clean energy and knowledge.
- Provide support for innovation through investment and efficient policies and regulations.
- Put a price on carbon to stimulate innovation and commercialisation of low emission industries and technologies.
- Increase awareness, promote the options and develop tools to engage and motivate communities and businesses.
- Improve education and training to help industry transition through knowledge and skills.

The Queensland Government is committed to growing existing key industries and fostering new industry sectors. Existing industries could benefit from a zero net emissions economy, for example, through the revival of energy-intensive manufacturing industries such as aluminium smelting powered by zero-emission electricity.

Queensland also has the potential to deliver renewable energy, such as biofuels, for export markets. The Queensland Government is leading Australia's bio-economic revolution through the Advance Queensland Biofutures 10-Year Roadmap and Action Plan. Queensland also has significant rare earth and mineral deposits which have high value in emerging and green technologies required for a decarbonising world.

The Queensland Government's Advance Queensland initiative supports diversification of the economy by developing new industries and creating the knowledge-based jobs of the future. The various programs within this initiative will support the development and deployment of innovative technologies that will help existing and emerging industries compete and flourish in a low to zero emissions economy.

Over the next two years, the Queensland Government proposes to:

- incorporate the zero net emissions target and interim target into its Advance Queensland agenda
- identify opportunities to actively engage with innovators to promote zero emissions innovation through initiatives such as Climate-KIC and the Global Business Challenge.

> *"All new buildings should be fitted with solar panels and batteries, or connections to neighbourhood solar generation and storage."*

CASE STUDY: ADVANCE QUEENSLAND

Advance Queensland supports projects to help manage climate risk, develop renewable energy solutions, and develop Queensland's solar PV and battery energy storage industries. Projects that have been funded to date include:

Advance Queensland Research Fellowships:

- *Smartphone-based decision support tool*—this project will develop an actionable, research-based approach to cyclone mitigation in Queensland and other cyclone-prone regions of Australia.
- *Maximising renewable energy penetration through smart inverter deployment and control*—a research project to enable higher penetration of renewable energy sources in Queensland.
- *Making solar better: advanced electronics for distributed energy storage*—research to help solve power quality issues in low voltage distribution networks by developing an advanced direct current converter to be used in battery energy storage.

Advance Queensland Ignite Ideas:

- *Optimisation of patented wind turbines*—optimisation of a proprietary wind energy technology using advanced computational fluid dynamics modelling for improved wind energy harnessing.
- *Impact Building Systems*—field trials for a patented low cost solar thermal collector.
- *Elevare Energy*—funding to undertake research and development into technologies that use clean energy from rooftop solar stored in Queensland-made 'smart' batteries to reduce peak demand charges in commercial buildings.

Advance Queensland Innovation Partnerships:

- *Battery and Microgrid Management Systems*—a project to develop and demonstrate two new products for the management of batteries in solar energy systems and the management of microgrid systems.

Advance Queensland Business Development Fund:

- *Tritium: improving our energy future*—funding to assist Tritium (a Queensland-based company) to undertake research and development into electric vehicle technologies.

WHAT IS CLIMATE-KIC?

Climate-KIC (Climate-Knowledge Innovation Community) is Europe's largest public-private innovation partnership, working together to address the challenge of climate change.

The objective of the organisation is to drive innovation in climate change through creative partnerships large and small, local and global—between the private, public and academic sectors.

Building on its success in Europe, Climate-KIC is now establishing in Australia. Partnering with Climate-KIC gives Queensland the opportunity to actively build its innovation eco-system in climate change. For more information on Climate-KIC see: www.climate-kic.org

WHAT IS THE GLOBAL BUSINESS CHALLENGE?

The Global Business Challenge (GBC) was established in 2014 as the G20 Global Business Challenge. The GBC is managed by the Queensland University of Technology (QUT) and supported by two other leading Australian universities—The University of Queensland and Griffith University—as well as the Queensland and Australian Governments. The GBC has seed funding of $500,000 each year for an initial seven years to address real-world solutions such as the global water challenge, food security and healthcare. Building on the success of the inaugural competition in 2014, the Global Business Challenge has quickly established itself as the world's premier innovation competition.

The challenge for the 2017 GBC is to identify novel solutions that lower the cost and/or reduce the risks associated with the transition from fossil-fuel based energy to achieving sustainability and reliability from renewable energy sources.

Proposed solutions may cover any domain within the renewable energy theme, and one or more points within the value chain (generation, distribution and storage). Proposed solutions should include demonstrable new technologies, as well as novel business models that support widespread adoption and successful commercialisation.

> *"The global economy of the future will be based around renewable energy and low carbon initiatives. Put simply, we should aim to be at the forefront of this transition, in order to position Queensland for the benefits of innovation. We are ideally placed to do this."*

The transformation of our transport, buildings, manufacturing, energy, food and agricultural systems all create exciting opportunities for Queensland, but we need to plan to achieve the full benefits of them.

Innovation isn't necessarily about technology and funding - it can also be about innovative leadership, collaboration, and stakeholder engagement.

PATHWAY 3

WORK WITH QUEENSLAND'S REGIONAL COMMUNITIES TO TRANSITION

Response 5

Support Queensland communities to take action

Action

5.1	Build leadership capacity within communities to develop place-based climate transition roadmaps
5.2	Our Transition—provide tools, data and financial support for communities
5.3	Zero net pledges and Talking Transition program
5.4	Decarbonise remote communities
5.5	Work with local governments to build climate transition capacity

What Queenslanders said:

- Queensland should base decisions on scientific evidence and research, and communicate the benefits of a clean energy transition.
- Facilitate behaviour change and engage the community on what they can do regarding sustainable alternatives and low carbon choices through awareness campaigns.
- Improved state, regional and town planning to optimise low-carbon opportunities.
- Develop consumer incentives, ensuring low-carbon options are affordable and accessible to everyone.

One of Queensland's great strengths is its regional communities—and their support is vital to the state's economic transition. Action at a local level will have a significant impact on our state's overall ability to meet the 2050 target, and will extend and complement action being undertaken at national and interstate level.

Those regional communities that will be most impacted by the economic transition are also best placed to identify the opportunities they have in the future. It is in the interests of Queensland to ensure that these communities are empowered to play an active role and that policies, where possible, encourage 'place-based' initiatives.

Climate change action at the sub-national, regional and city level—and specifically place-based emissions reduction initiatives—are already producing significant results internationally and have been identified as making a critical contribution to meeting our obligations under the Paris Agreement.

Cities are at the forefront of climate innovation, with carbon neutrality now a goal for hundreds of cities around the world. Some communities are innovating through a 'precinct' approach where government, industry and community work together to reach zero net emissions in a geographically-defined area.

Many communities across Queensland are already doing a lot to transition to the new economy—for example, by taking up renewables and through active transport and local sourcing of goods and services. Community groups are often led by volunteers who harness the resources of their local community to achieve effective on-the-ground results. The Queensland Government recognises the importance of this kind of community action and proposes to support these initiatives.

> *"I think there is a general lack of understanding of climate change in the population. This means that change is often seen as unnecessary or just another cost. This lack of support understandably makes Governments hesitate as they do not want to choose the less popular pathway."*

> *"You need to be using design to engage communities in meaningful, innovative ways, not gimmicky technology but actually sitting down with people, running workshops, identifying what challenges face particular communities and then designing alternative futures that the community can believe in and work towards."*

> *We need a change in ideas of people before we can expect everyone to just adopt sustainable practices. Knowledge is power.*

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CASE STUDY: REGIONAL COMMUNITIES AND ECO-TOURISM

Lady Elliot Island is a tiny 42ha Coral Cay, the most southern island on the Great Barrier Reef. In the past the island was mined for guano and was heavily degraded, but it has now been transformed to its former state. The island's sole operation is now a small eco resort with 41 cabins. It is renowned as an example of environmental best practice—providing an awesome holiday experience in a natural environment.

Transitioning towards low-emission self-sufficiency, while developing a successful business that manages everything in a sustainable way and preserves the island for future generations, has been a challenging exercise.

The island desalinates almost 30,000 litres of fresh water daily, as rainwater collection is not possible due to the highly populated bird colony. The underground aquifer is critically important to the island's eco-system. Waste water is processed by a waste water treatment plant and re-used to irrigate the airstrip's grass and island vegetation. All other wastes require the same responsible management practice. The island fully recycles, and all food waste and cardboard is composted and used as fertiliser for the nursery.

The island has always made its own power using diesel generators. In the past around 550 litres of diesel fuel was consumed daily. Over the past eight years the resort has converted to a hybrid solar power station with over 400 solar panels—and now burns under 100 litres of diesel per day.

While some doubted the island would achieve even 50% reduction due to the high power requirements for desalinating water and powering the resort's growing operations— over 80% reduction was achieved, saving more than $200,000 each year. The savings were used to invest in a new desalination system, utilising the latest technology which makes the same volume of water as before, but does so in nine hours instead of 15.

The goal for the island is now 100% renewable energy. It is a balance between being financially sustainable and environmentally sound.

Feedback from consultation with communities has indicated that the most effective support for local action is to provide small grants, and to promote networking within and across communities so they can inspire each other and share knowledge. The Queensland Government will deliver a small grants program for communities using innovative approaches to reduce emissions locally.

The Government will build capacity within its non-government and not-for-profit sectors to ensure communities have the skills and capacity to facilitate transition conversations.

To provide Indigenous and other remote communities with more reliable and cleaner energy, the Government will accelerate the state's commitment to renewable energy and facilitate the installation of solar photovoltaics, battery storage and smart street lighting in remote areas. This will also support training and jobs for local technicians.

The Government will also assist communities with effective tools, information and data. Regional climate change projection data, information on relevant technologies, and innovative carbon reduction projects will be made publicly available online. These online resources will enable communities across Queensland to communicate and network on carbon projects, as well as providing a range of general resources, tips, how-to guides, and other tools. Communities can also share their carbon transition stories so other groups can learn and be inspired.

Local governments have an important role to play in facilitating and supporting progress towards zero net emissions goal. The Queensland Government will support local governments to integrate climate change initiatives across their functions and provide leadership within the local community and through the existing Queensland Climate Resilient Councils program.

The Government's support for Queensland communities taking action will be underpinned by a strategic communications and engagement strategy for sharing climate transition knowledge and showcasing community and industry leadership. This will be complemented by a zero net 'pledge' program to engage individuals, community organisations and business to make a public commitment to reducing carbon pollution and transitioning towards a low carbon future.

CASE STUDY: ZERO EMISSIONS NOOSA

Zero Emissions Noosa (ZEN) was launched in 2016 with the goal of achieving zero net carbon emissions in the Noosa Shire community by 2026. The group is an alliance of 15 business, environment and tourism organisations, together with Noosa Council, CQUniversity and Sunshine Coast University.

The strength of the group lies in the unique alliance from organisations across the business and environment spectrum. With assistance from Noosa Council and Beyond Zero Emissions, ZEN has established the key contributors and quantities of its greenhouse emissions.

ZEN has established five working groups to tackle key emissions sectors: electricity, buildings, waste, land use and transport. Each of these groups has been working to identify strategic initiatives for the region.

The electricity group is developing case studies for the tourism industry demonstrating the payback for installing solar panels. The transport group knows that reducing the dependence on the private motor vehicle is a major task, and will engage with the community to explore opportunities such as using electric bicycles as an alternative to commuter travel. The land use group is developing a major strategic plan focussing on hinterland food production and revegetation opportunities.

Response 6

Skill Queenslanders for new economy jobs

Action

6.1	Work with local governments and key stakeholders to develop local and regional jobs plans
6.2	Work with Queensland industries and communities to develop a Workforce Development and Skills Plan for low and zero emissions jobs

What Queenslanders said:

- Recognise and advocate for industries important to Queensland's economy, such as tourism and agriculture, and help them transition.
- Opportunities exist for new low-carbon industry and jobs, and a " future proofed economy".
- Retrain workers and guarantee jobs in cleaner energy to support workers to transition.

Some of the jobs of today will not be the jobs of tomorrow.

As the world shifts towards zero net emissions there will be growth in clean energy and technology industries, and opportunities for Queensland businesses and workers to take advantage of these emerging industries.

The Queensland Government will use the economic risks and opportunities analysis—outlined in *Response 3: Understand the risks and opportunities that a zero emissions future presents for Queensland*—to understand where and how Queensland will be most affected by global economic shifts, and work with affected communities to provide them with the information and support they need to develop localised plans.

These strategies will identify industries that can be supported and expanded to ensure a sustainable economy into the future for these communities. Working in partnership with workers, communities and industry, the Government will consider what support is needed for workforce planning to meet the needs of individual communities and workforces.

Coupled with the Government's engagement with the start-up community to promote *Zero Emissions Innovation in Action* (Response 4), the Government will analyse the risks and opportunities of a zero net emission future (Response 3) to help better understand the potential for new and expanded industries of the future. This analysis will be critical to inform workforce and skills planning for new economy jobs in Queensland to ensure that no Queenslanders is left behind as we transition.

WHAT TYPES OF SKILLS WILL WE NEED IN THE FUTURE?

Creating new industries and using new technologies means workers with the necessary skills will be required. Many skills will be transferable but it will be important to ensure that workers—now and in the future—have access to the training needed for developing the skills required for new economy jobs. Skills needed in the new economy include:

- Engineering and construction skills for designing, siting, and building renewable energy and bio-industrial plants. For example: siting and erecting the wind turbines; designing appropriately-sized and safe biogas capture systems; and developing new processing equipment for unconventional bio-industrial feedstocks like weeds and waste.
- Electrical skills in renewables, energy efficiency, battery storage and electric vehicles to service and install these systems in residential, commercial, and industrial applications. With increased electrification of vehicles, servicing and repair of vehicles will require more auto-electrical skills.
- IT and communications to support the growth of the 'Internet of Things', increasing demand for IT infrastructure design and servicing skills.
- Carbon farming and land management to make the most of carbon export markets, rehabilitate degraded land, and produce food and fibre in low carbon and climate resilient ways.

It is important to understand the drivers for skills demand, training needs, projected workforce profiles, and critical skills and occupations for the renewable energy and zero net emissions technology industries.

Low and zero emissions industries require planning that links economic, industry and workforce objectives. Once the risks and opportunities associated with Queensland's transition are better understood, the Queensland Government will work with industries and communities to develop a Workforce Development and Skills Plan for low and zero carbon jobs to maximise opportunities for the state's workforce and jobseekers to secure jobs in low or zero emissions industries by:

- better understanding industry needs
- building the workforce in targeted communities
- increasing workforce participation
- maximising skills development and training provision in renewable energy construction.

> *"The opportunity for long term job creation in regional areas is incredible, jobs that will not end like those of the mining boom. We have the opportunity to bring employment and wealth back to suffering regional communities for the future and long term."*

> *"Queensland climate plan needs to go beyond energy. It's critical that the State Government invests in retraining of workers, encourages investment in places of industrial change and sets clear plans and targets for industry to mitigate against the risk of unplanned closure."*

Climate Change

#31267




Queensland Strategy for Disaster Resilience 2017

Making Queensland the most disaster resilient state in Australia

Queensland Government

Foreword

Message from the Deputy Premier

As Queenslanders, we know full well what it is to bear the brunt of Mother Nature and to be struck by disaster. We have risen above adversity time and time again following natural disasters, more recently the devastation of Severe Tropical Cyclone Debbie. That says a great deal about our capacity for resilience.

We know that the impact of climate change means there will be more frequent and potentially devastating weather events to come. As such, our efforts to be more resilient must be dynamic. In Queensland, we need to continue building our resilience as we learn to respond, adapt and develop strategies to prepare for the next inevitable natural disaster.

That is why this government appointed Australia's only stand-alone, permanent agency, the Queensland Reconstruction Authority, to oversee disaster recovery, mitigation and resilience policy and tasked it with delivering the Queensland Strategy for Disaster Resilience.

The Strategy will capitalise on the good work already being delivered by our state agencies as well as local governments and communities and provide a cohesive approach to building resilience throughout the state.

Through the Strategy, the Queensland Government is committed to supporting local governments and working with them and their communities to identify resilience activities that will help safeguard their long-term wellbeing.

We will consult widely and we will listen to the unique perspectives of Queenslanders who understand better than anyone the challenges our diverse state delivers.

The Queensland Strategy for Disaster Resilience 2017 gives focus to this government's commitment to make Queensland the most disaster resilient state in Australia.

Queensland is a large, diverse state with a unique mix of rural, regional, remote, urban and coastal communities. Each of these communities is faced with its own set of opportunities and challenges in a time of unprecedented change and uncertainty.

To thrive in such an environment it is essential that Queenslanders are prepared and empowered to adapt to circumstances as they change.

It is a well-known fact that Queensland's 4.9 million residents are regularly exposed to a range of hazards. These hazards, in conjunction with a warming climate, represent a significant threat to our ongoing safety and prosperity.

The tragic loss of life and devastating, long-lasting social and economic costs brought on by disasters over the last decade highlight the need for a fundamental shift in the way we deal with disasters and their impacts.

This shift away from merely coping with disasters towards a culture of resilience is already underway in Queensland.

We are learning that we all have a part to play in getting ready for the next inevitable disaster, and that small actions carried out ahead of time can improve the likelihood that our families, homes and businesses will bounce back from adversity.

A culture of resilience embodies more than just hardening our infrastructure. While the importance of structural mitigation and resilient design cannot be understated, it is the extent to which our communities have the capacity, skills and knowledge to adequately prepare, respond and adapt in the face of rapid change that will have the most lasting influence.

We are more aware than ever that the key to successful adaptation lies in our partnerships. Our efforts to reduce disaster risk are showing that initiatives are most effective when designed to tap into local networks and when tailored to meet the needs of distinct communities.

Our experience in dealing with frequent natural disasters has already contributed to the resilience of Queenslanders.

Through the Queensland Strategy for Disaster Resilience (the Strategy) the Queensland Government will harness the capabilities of its agencies, informed by the experience and knowledge of local governments, communities and individuals, to further build the state's capacity for resilience against all hazards.

Introduction

Queensland is the most disaster impacted state in Australia. Since 2010, Queensland has been impacted by more than 50 significant natural disaster events resulting in tragic loss of life and more than $14 billion in damage to public infrastructure. Disasters have been shown to cause social costs equal to or greater than the physical costs. The impacts are felt immediately, and the trauma can endure for generations, profoundly affecting the fabric of our communities.

Our warming climate is already causing a shift in the frequency, distribution and intensity of weather events, with Queensland likely to be exposed to hotter summers, more intense rainfall, flooding, storms and cyclones. Disasters are expected to expose communities to previously unknown risks. This means greater emphasis on understanding the likely impacts, and preparing for them, will be integral to mitigating those risks.

Furthermore, we must also be conscious that disasters are not contained to natural hazards alone, but also encompass human initiated events that require a similar response to facilitate community resilience.

Although disasters cannot be prevented, we can take steps to better understand the risks associated with them and use that knowledge to implement targeted measures that effectively mitigate disaster-related impacts, safeguard communities, reduce recovery and reconstruction costs, lessen the likelihood of injury, death and damage, and speed up recovery.

Through the Strategy we are committed to the continued delivery of programs and initiatives that help to build safe, caring and connected communities, create jobs and a diverse economy and protect our precious natural environment.

The Strategy will drive the identification of opportunities and disaster risk management policy options to:

- build safe and connected communities
- support all Queenslanders, including those with vulnerabilities
- deliver resilient infrastructure
- stimulate economic growth
- ensure sustainable management of natural resources
- enable responsible development

Our stakeholders

Resilience is a shared responsibility and the Strategy's success will depend on the collective effort of individuals, communities, businesses, as well as governments. The following stakeholders are central to the Queensland Strategy for Disaster Resilience 2017:

- Queensland communities and individuals
- Local Governments
- Queensland businesses and service providers
- State Government agencies
- The Australian Government
- Community-based organisations
- Non-government organisations

Image courtesy of ADF

Resilience

Resilience is a term used in a variety of contexts and in a multitude of disciplines, including economics, psychology, climate science and agricultural studies.

In the context of disaster management, it is suitable to refer to resilience as:

> *A system or community's ability to rapidly accommodate and recover from the impacts of hazards, restore essential structures and desired functionality, and adapt to new circumstances.*

State, national and international experience has shown that the following elements contribute to a resilient organisation or community:

- Risk-informed and appropriately prepared individuals
- The capacity to adapt
- Healthy levels of community connectedness, trust and cooperation

Current research in the field of resilience informs us that it is at the community level that the most powerful action can be taken to address disaster risk. Communities play an active and central role in disaster risk prevention and preparedness, and are the first to experience the rapid changes brought on by disasters that call for the adaptation required to survive and thrive.

Resilience should be realised as tangible improvements in the capacity and capability of a community to prepare, respond and recover from a disaster event. This includes the effectiveness of engagement and support of agencies, entities and individuals who serve the community within the context of Queensland's disaster management arrangements.

Critically, activities to improve levels of resilience to disaster rely on changing how we think and operate as part of our "business as usual". Building resilience must be an ongoing process of learning, adjustment and adaptation that continues well beyond the phases of response and recovery. This shift is needed to guide implementation of risk reduction and to shape behavioural and cultural change across all stakeholders and sectors of the community.

Many of our communities have embraced opportunities for reducing disaster risk and building resilience before, during and after a disaster event. They have engaged with disaster risk reduction experts and have made significant, measurable progress.

Reflecting international research and experience, resilience needs to be embedded at all stages of the traditional disaster management cycle of Prevent, Prepare, Respond and Recover. The Strategy supports those dynamic processes as stakeholders engage in associated phases of 'Anticipation', 'Response' and 'Adaptation'.

The Strategy provides an overarching framework to empower Queenslanders to factor in resilience measures and activities as they:

Anticipate

- assess risk exposure, vulnerability and capacity to cope
- strengthen alliances and networks and plan for continuity
- allocate resources ahead of disasters and take appropriate measures to reduce exposure
- incorporate current research and lived experience in planning for future disasters
- invest in structural and social measures to lessen the impact of disasters on individuals, homes, businesses, communities, assets and the environment

Respond

- mobilise strengthened alliances and networks for rapid and effective disaster response
- have the capacity, skills and knowledge to safely respond to and recover from a disaster and adjust response and recovery plans to rapidly changing circumstances

Adapt

- adapt to changed circumstances through reassessment, reorganisation and the application of learnings
- develop new courses of action and identify and introduce new resources
- acknowledge that we cannot eliminate all risk, and that ultimately we are all responsible for reducing exposure
- are empowered with information in order to make informed decisions regarding risk and consider alternatives when faced with changed circumstances

The Queensland Strategy for Disaster Resilience

The Queensland Strategy for Disaster Resilience is the guiding instrument through which we will realise our vision:

Making Queensland the most disaster resilient state in Australia.

The Strategy complements the existing disaster management arrangements in Queensland, as specified in the *Disaster Management Act 2003* (the Act). It should be read in conjunction with the *Queensland Disaster Management Strategic Policy Statement, the Queensland State Disaster Management Plan* and the *Emergency Management Assurance Framework*.

In accordance with the Act, our police, fire and emergency services and local governments are regularly required to call on their well-practised systems to safeguard our communities and expedite recovery when disaster strikes. The Strategy further supports the Act to drive the incorporation of disaster preparedness and risk reduction into daily government, business and community activities in Queensland.

The Strategy aligns with international and national reforms on disaster risk reduction, mitigation and resilience policy and actions.

The Strategy aligns with the principles of the *Sendai Framework for Disaster Risk Reduction 2015-2030* (the Sendai Framework), the current global blueprint for managing disaster risk reduction. The Sendai Framework was adopted by United Nations Member States, including Australia, in March 2015. It aims to substantially reduce "disaster risk and losses in lives, livelihoods and health and in the economic, physical, social, cultural and environmental assets of persons, businesses, communities and countries".

The Strategy is consistent with the guidance provided in the *National Strategy for Disaster Resilience (2011)* and its seven priority actions to build resilience across the country.

The Strategy also aligns with requirements set out under the *Natural Disaster Relief and Recovery Arrangements (NDRRA) Determination 2017*, which requires all states and territories to demonstrate appropriate disaster mitigation strategies.

The Strategy acknowledges that the adverse effects of disasters are felt first and most significantly by people with vulnerabilities. Therefore implementation of the Strategy will be informed by *Queensland's People with vulnerabilities in disasters – A framework for an effective local response*, to ensure local governments and community partners are supported to reduce vulnerability, thereby increasing levels of community resilience.

The Strategy:

- sets the strategic direction for the realisation of the Queensland Government's vision to make Queensland the most disaster resilient state in Australia
- enables the harnessing of local, cultural and historical knowledge to deliver tailored strategies to embed an ongoing pursuit of resilience that will create stronger, safer, healthier and more secure communities
- encourages the development and strengthening of relationships across all levels of government and within communities to facilitate a coordinated and collaborative approach to building disaster resilience
- identifies the key components required to reduce disaster risk and build resilience across Queensland
- provides the framework to align disaster resilience activities with Queensland Government priorities, including the State Infrastructure Plan, the Queensland Climate Adaptation Strategy and the Queensland Government's objectives for the community
- embraces the use of evidence-based and coordinated disaster risk reduction activities, aligned with international best practice

Guiding principles

The Strategy is guided by the following principles:

Shared responsibility

While governments have a primary role to play in addressing disaster risk, all Queenslanders share the challenge and responsibility for preventing, preparing for, responding to and recovering from the impacts of disasters. Many Queenslanders have a better understanding of their local disaster risks than anyone else, and are often best placed to identify and, with support, act on opportunities to reduce their vulnerability and exposure to hazards. Ultimately, increasing our resilience to disasters relies on Queenslanders working in partnership to develop their capacity to adapt to change.

An integrated risk-based approach

Building resilience to disasters is an increasingly complex challenge with effort required from a range of stakeholders, and there is a need for renewed collaboration between and across sectors and public agencies. We recognise that communities across Queensland are diverse in nature and require tailored solutions that reduce risk and build resilience. An integrated risk-based approach will ensure that initiatives are locally driven, and address the hazards and associated risks specific to that community.

Evidence-based decision making

Efforts to reduce and prevent disaster risk and build resilience are informed by recent and reliable data. Risk information is shared across sectors and communities to inform targeted risk reduction initiatives. Local knowledge represents a powerful store of evidence that will be incorporated into resilience initiatives. Importantly, the evidence is consistently used to deliver meaningful outcomes for Queensland communities and regions.

Continual learning

Building levels of community resilience is an ongoing process. We will continually seek to learn from our experiences and apply these learnings to improve our preparedness for future adversity. We consistently evaluate our efforts with the ability to adapt to changing circumstances. We will identify opportunities to promote the understanding of disaster risk and disaster resilience amongst students, professionals and the wider public.

Key Objectives

The success of the Strategy will be measured across the following Key Objectives and related Outcomes:

Queenslanders understand their disaster risk

Outcome: Queenslanders have access to up-to-date risk information, are better informed and better prepared for disasters.

Strengthened disaster risk management

Outcome: The understanding and practice of disaster risk reduction is integrated within and across all sectors.

Queenslanders are invested in disaster risk reduction

Outcome: Queenslanders are engaged and invested in efforts to reduce exposure to disaster risk and build resilience.

There is continuous improvement in disaster preparedness, response and recovery

Outcome: Enhanced disaster preparedness for effective response, recovery and adaptation to changed environments.

Our commitment

Through the Queensland Strategy for Disaster Resilience the Queensland Government commits to:

- Delivering more resilient infrastructure and transport systems
- Driving attitudinal, cultural and behavioural change across the state, enabling Queenslanders to anticipate, respond and adapt to disaster impacts
- Innovation in urban area design for living with the impacts of floods and droughts
- Promoting the incorporation of risk reduction in all planning and development
- Understanding the risks associated with a warming climate with improved coastal management
- Supporting the ability of our natural assets to serve as protective buffers against disaster impacts
- Furthering the understanding and management of natural landscapes to reduce the impacts and effects of floods and bushfires
- Building partnerships across community, industry, research organisations and government to improve the health of waterways and marine areas
- Identifying adaptation opportunities following disasters and in anticipation of climate change
- Providing opportunities for community-based solutions to the impacts of disasters
- Building greater business resilience and preparedness
- Increasing community awareness and preparedness for all hazards through community engagement
- Initiating research and evaluation projects to promote the positive trajectory of building resilience in Queensland
- The development and implementation of a strategic framework for flood risk management
- Driving continuous improvement in disaster management in Queensland via assurance frameworks and accompanying performance measures
- Minimising disaster impacts through flexible and adaptive planning

Delivery

The Queensland Reconstruction Authority (QRA) is the lead agency responsible for disaster resilience policy and will work with all stakeholders, with a commitment to collaborative policy development for the implementation of the Strategy and the delivery of resilience initiatives.

A steering committee will be established with membership from all relevant state government agencies, the Local Government Association of Queensland and other stakeholders, to identify and promote initiatives that can be implemented under disaster resilience programs and coordinate available funding to address priorities.

The steering committee will oversee implementation of the Strategy, reporting to the Queensland Disaster Management Committee (QDMC) through a leadership board, comprised of the Chief Executives of key Queensland Government agencies. The QDMC is established under the Disaster Management Act 2003, and assumes the state-level role for the strategic direction of disaster management and decision-making.

Under section 30 of the Disaster Management Act 2003, Local Disaster Management Groups are responsible for ensuring that their communities are aware of ways of mitigating the adverse effects of an event, and preparing for, responding to and recovering from a disaster. The Queensland Government acknowledges that State agencies have a supporting role for Local Disaster Management Groups to better enable Queensland communities to understand and manage their exposure to disaster risk and implement local resilience building initiatives.

The successful delivery of effective resilience measures will be supported by input from the tertiary sector and national and international research bodies to ensure decision-making is informed by a solid evidence base.

Measuring success

The QRA will monitor and evaluate the effectiveness of the Strategy and provide regular reporting to the responsible Minister, who will provide annual reports to Cabinet on progress against the Strategy.

Resilience will be measured at different levels across Queensland – at the state level and down to districts, towns, communities and individuals. A set of tailored indicators will be employed to measure progress made over time towards developing increased levels of resilience.

The indicators will be established via consultation with local governments and the Local Government Association of Queensland, community-based and non-government organisations, the private and tertiary sectors and our partner agencies, to ensure the unique characteristics of Queensland communities are taken into account when capturing successes and evaluating the effectiveness of resilience initiatives.

The indicators will support current, evidence-based decision making and the identification of opportunities to enhance preparedness, response and recovery from all hazard impacts. They will allow the benefits of proven initiatives to be measured, with learnings shared with all communities across the state.

The indicators will complement the work already carried out by the Office of the Inspector-General Emergency Management to empower Queensland communities to reduce local risk through application of the principles and shared responsibilities outlined in the Queensland Emergency Management Assurance Framework.

Stakeholder responsibilities

In accordance with the guiding principle of shared responsibility, all Queenslanders have a role to play in reducing our exposure and vulnerability to risk and to building resilience.

The **State Government** is responsible for:

- coordinating and executing disaster management arrangements in Queensland
- providing strategic direction and coordination of efforts to build resilience across all sectors of the community
- enabling access to up-to-date and reliable risk information
- ensuring all sectors of the community are aware of the options available for effective risk reduction.

Local governments are responsible for:

- leading local level disaster management arrangements through the effective operation of Local Disaster Management Groups
- building community understanding and capability to manage risks
- leading enhanced community resilience
- reducing exposure to all hazards through responsible land use planning, development and construction
- maintaining the natural environment to preserve natural buffers and critical ecosystems that contribute to resilience.

The **private sector**, **community organisations**, **service providers**, **government-owned corporations** and **non-government organisations** are responsible for:

- understanding their exposure to disaster risks
- preparing business continuity plans
- contributing to the social and economic recovery of affected communities
- considering the prevention and reduction of risk as part of their core activities.

Queensland **communities and individuals** are encouraged to:

- build healthy levels of community connectedness, trust and cooperation
- understand their exposure to local risks
- carry out activities to plan and prepare for all hazards.

The **tertiary sector** should:

- work collaboratively with the public and private sectors to inform and develop risk reduction strategies based on emerging evidence.

Our partners

Strong, well-connected networks, together with a coordinated, collaborative approach to increase alignment of effort across the disaster management cycle, will provide a primed environment for disaster resilience initiatives to take effect.

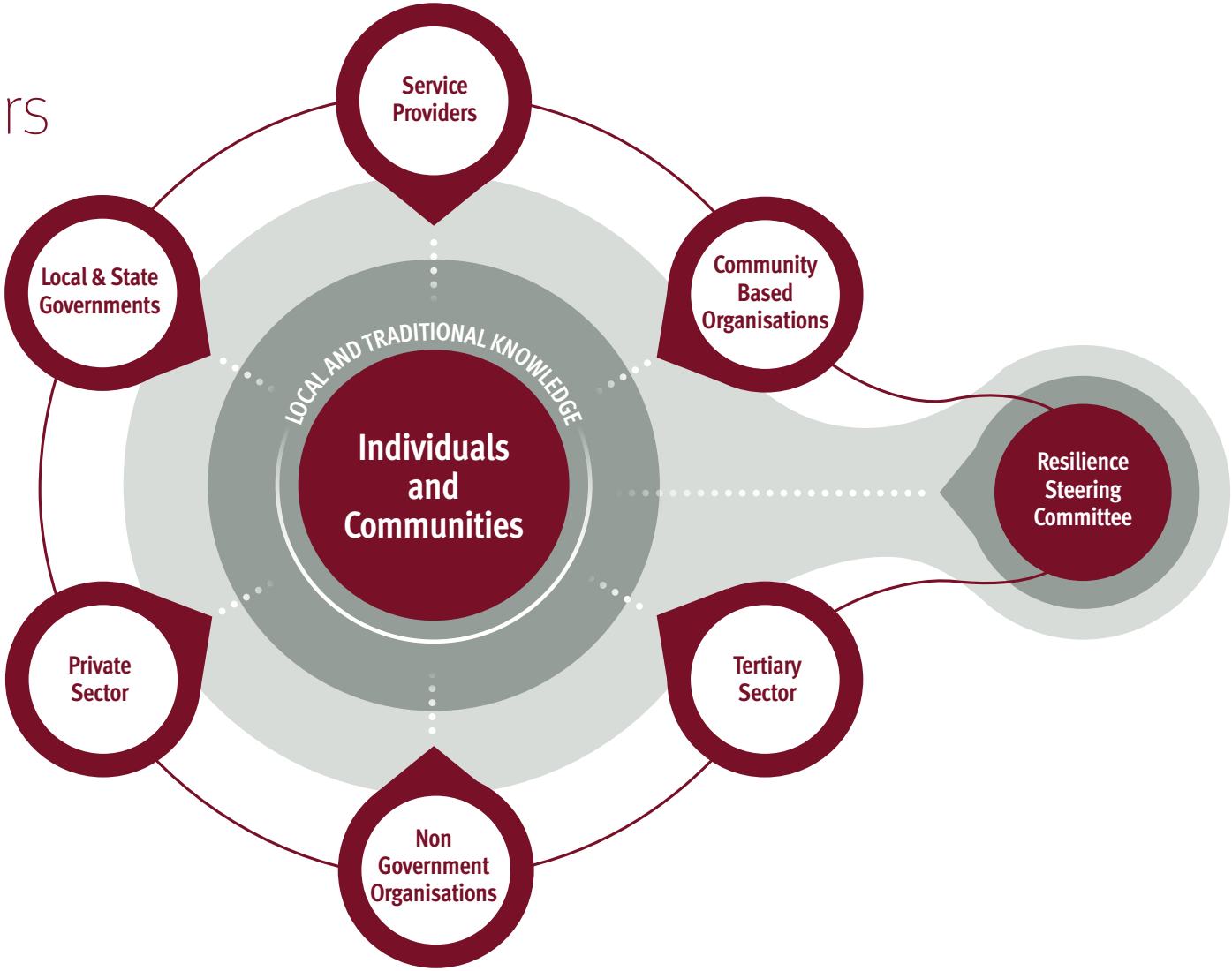


Image courtesy of ADF

Strategy review

The Queensland Strategy for Disaster Resilience will be reviewed regularly to ensure it remains aligned with national and international frameworks and reflects lessons learned from implemented initiatives across the state.

Implementation

Successful implementation of the Strategy begins with the understanding that a one size fits all approach to increasing levels of resilience will not be effective in Queensland. Actions and the subsequent evaluation of their effectiveness will be tailored to take into account the considerably diverse nature of our rural, regional, remote and urban communities on the coast and inland. Measures to increase resilience will be designed to address opportunities at the individual, local community, regional and state levels.

The Strategy will be implemented in conjunction with existing disaster management arrangements following a program of heavy consultation with representatives of all sectors. The Queensland Government will work with existing partnerships, and create new ones, to achieve its vision of building resilience.

Image courtesy of ADF

Queensland Strategy for Disaster Resilience 2017

Making Queensland the most disaster resilient state in Australia

Queensland Government

1 Introduction

An assessment of the suitability of the existing runway and potential for a new runway was undertaken. This assessment was based on a wind analysis only and does not consider other aspects such as runway lengths, pavement, environment or approvals. No stakeholder consultation was undertaken as part of the assessment.

The assessment considered the current 09/27 and a potential new runway 15/33.

2 Methodology

The following information was utilised in undertaken the assessment:

- Data received from BoM includes wind speeds by direction (16 compass points) per minute.
- Minute data for maximum wind speed and direction averaged over each hour to reduce the number of data points
- Data from 2013 – 2019 was inputted into WindRose PRO 3 to produce an 'All Weather' windrose analysis. No cloud base data was included to analyse for VFR condition (reduced visibility windrose analysis).
- A reference field length of less than 1200m has been adopted as the maximum allowable crosswind component criterion. The maximum allowable crosswind component is 19km/h or 5.2m/s, which has been used to assess the wind coverage/usability of the runway.
- Reference: ICAO Aerodrome Design Manual Part 1 Runways/Annex 14

3 Results

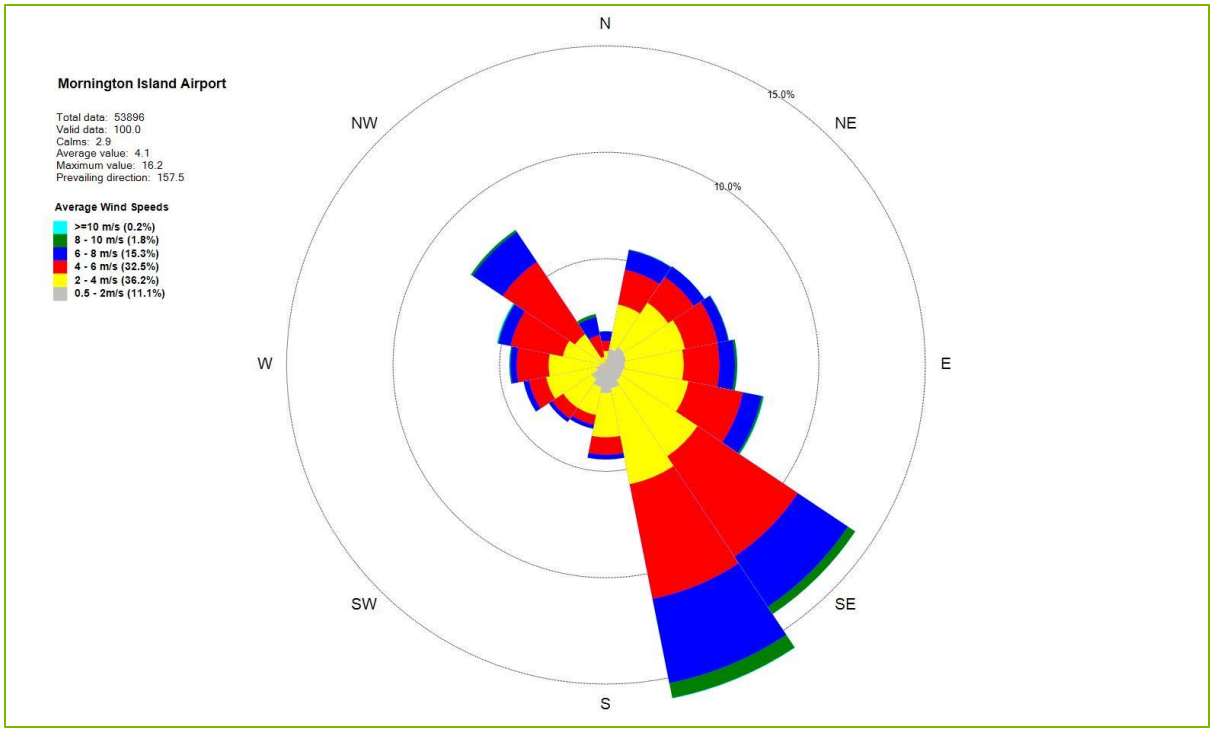
The prevailing wind direction is from 157.5° (SSE) based on the analysis undertaken.

If the airport is to have a single primary runway, the optimum orientation based on wind coverage/usability only is in the range between 120°/300° to 160°/340°. This means that, in this orientation range, crosswinds are expected to be below 19km/h more than 95% of the time (the 'safe' threshold). The proposed primary runway orientation of 15/33 is therefore acceptable (150°/330°, representing 95.2% usability).

- For comparison, the existing primary runway orientation is 09/27 (90°/270°, representing 88.8% usability) and the cross runway is 12/30 (120°/300°, representing 95% usability).
- The **most** optimum orientation is 13/31 (130°/310°, representing 95.3% usability).

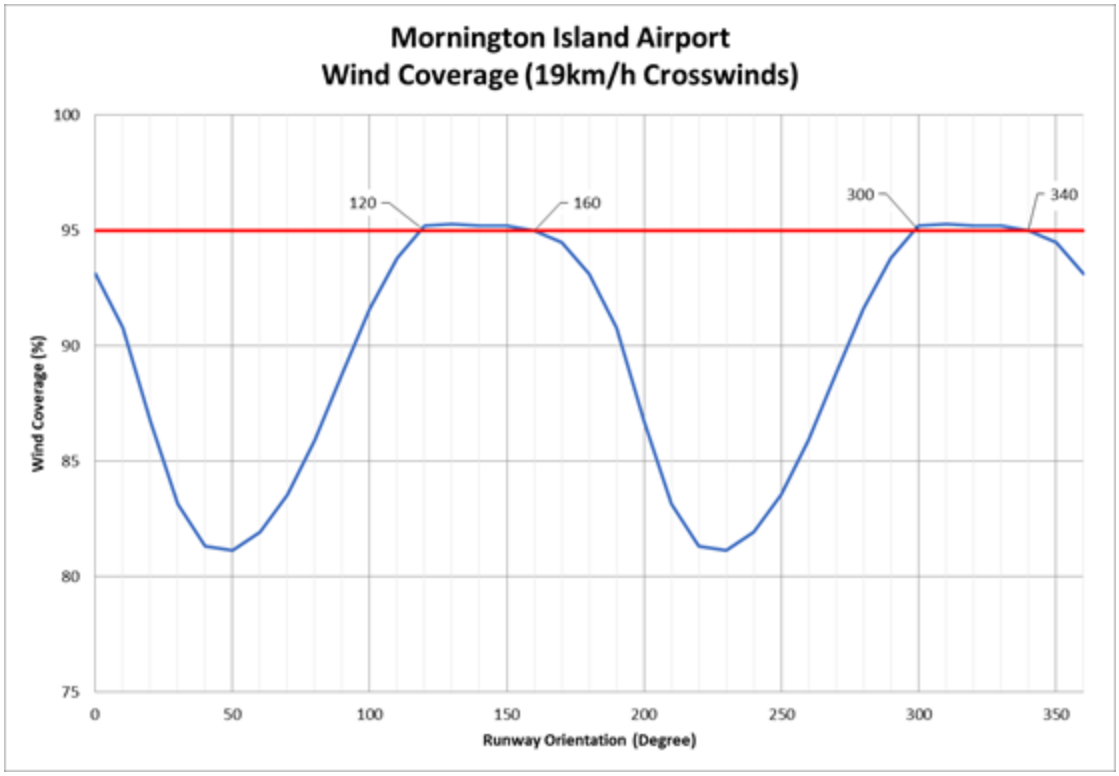
4 Outputs

The following figures provide details on the outputs of the assessment

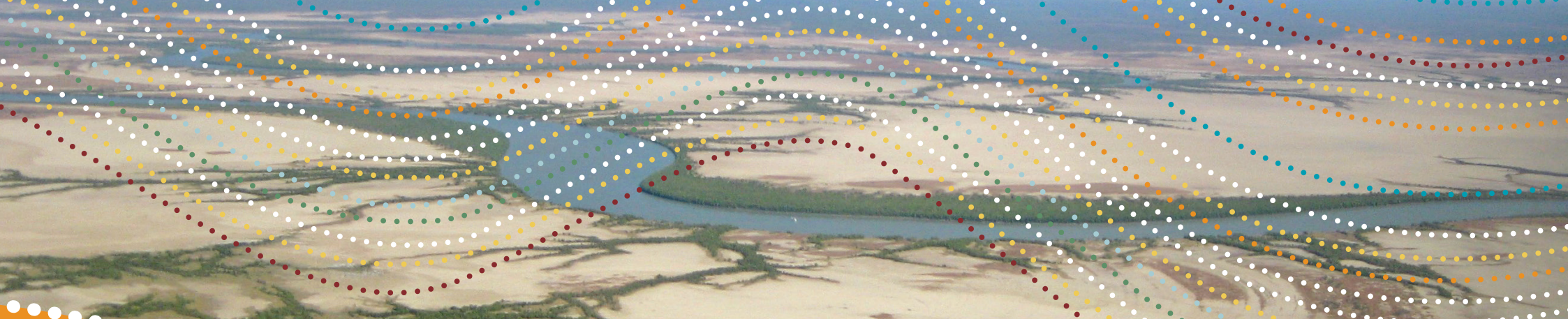


Mornington Island Wind Rose

Mornington Island Wind Rose – overlaid with aerial photo



Mornington Island Airport Wind Coverage (19km/h crosswinds)



MORNINGTON ISLAND MASTER PLAN 2020

Queensland Government

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